

July 1951

2/- Monthly

# BUSINESS

*The Journal of Management in Industry*



# A PRACTICAL APPROACH *to Mechanised Accounting*



It is important to view the problem as a whole. Maximum advantages can only be obtained if a survey is made of existing procedures and a clear conception formed of the information which is necessary.

REMINGTON RAND maintain a staff of Machine Accounting Representatives who are fully qualified to offer competent technical advice and draw up mechanical schemes to meet particular requirements. There is no need today to make drastic system alterations or to adopt rigid or standard

schemes which may be an obstacle to future development and progress.

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Surveys and advice are obtainable without obligation. Write to Remington Rand Ltd. (Dept. AM.14), Accounting Machine Division, 1-19 New Oxford Street, W.C.1, or 'phone CHAncery 8888.

## ***Remington Rand*** **ACCOUNTING MACHINES**

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REMINGTON  
*Foremost*  
ACCOUNTING MACHINES

Foremost in Adaptability,  
Quality of Work and Ease of Operation.



# *She never fluffs a word!*



## **Dictaphone TIME-MASTER recording on Memobelts is perfect from beginning to end**

YOU WANT absolute accuracy—and you get it when you use a Dictaphone Time-Master for your dictation.

There's no fading or distortion of your words when your secretary transcribes. For Memobelt recording is crystal-clear from beginning to end—far, far more dependable than either note-book-and-pencil or any other dictating method.

### **CYLINDRICAL RECORDING**

The reason? Simply—cylindrical recording. Those plastic Memobelts that you can file flat or mail by the dozen in an envelope, are virtually *cylinders* when they are in the machine.

And cylindrical recording means crystal-clear recording from beginning to end; it means constant recording speed; and it means that back-spacing too is uniform—and therefore simpler.

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1. Streamlined machine, only 4½ ins. high, slightly larger than a letterhead.
2. Uniformly clear recording and reproduction.
3. Uniform back-spacing, immediate place finding.
4. Simple automatic operation.
5. Mailable, filable, expendable Memobelts, low-cost plastic medium.
6. Nation-wide service, Dictaphone dependability.

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Regd. Trade Mark

## **ELECTRONIC DICTATING MACHINES**

MADE IN GREAT BRITAIN. Branch Offices: BELFAST BIRMINGHAM BRISTOL CORK DUBLIN GLASGOW LEEDS LIVERPOOL MANCHESTER NEWCASTLE

**BUSINESS FOR JULY, 1951**



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Cases**  
for  
famous  
names

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a member of the Bowater Organisation.*





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*bringing you better living*



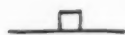
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The ENGLISH ELECTRIC Company Limited, Queens House, Kingsway, W.C.2

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## Your product may be —

*Small*



*or large*



*or light*



*or heavy*



*triangular*



*rectangular*




*Square*



*or rhomboid*



- **NONCURLING GUMMED PAPERS** for labelling every kind of product.
- **"GUMSTRIP" SEALING TAPES & "GUMSTRIP" SEALING MACHINES** for sealing all parcels, packets and cartons.
- **"SAMSON" ADHESIVES** for every trade.
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- **THE LIGHTNING LABELLER** moistens gummed labels in a second. Made in 3 in., 5 in. and 9 in. widths.

— but you can be sure it is safely packed if  
you use  **BUTTERFLY BRAND PRODUCTS**

BUTTERFLY BRAND

Made by **SAMUEL JONES & CO., LTD.**

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NEW BRIDGE ST. LONDON, E.C.4. • GRAMS: NONCURLING LUD LONDON • TEL: CENTRAL 6500



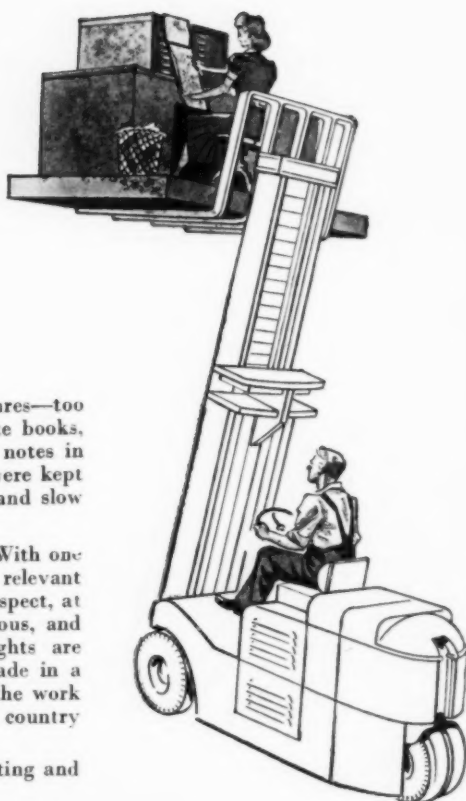
# RAISING OUTPUT?

## Management, too, needs modern tools

The raw materials of Management are facts and figures—too often scattered here and there about the office in duplicate books, letter files, card indexes, travellers' reports, odd pencil notes in somebody's desk, and so on. If a factory's raw materials were kept in this way, you would soon trace the reason for errors and slow production.

A SELDEX System is a precision-tool of management. With one designed for your particular set of conditions, all the facts relevant to the work of the department can be seen, in their broad aspect, at a glance. Anything needing attention is immediately obvious, and the details are available at the flip of a finger. Oversights are things of the past. Abstractions and correlations are made in a fraction of the usual time. With SELDEX Systems, all the work flows smoothly, as many of the most efficient firms in this country know.

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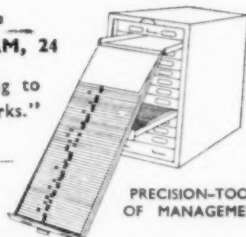
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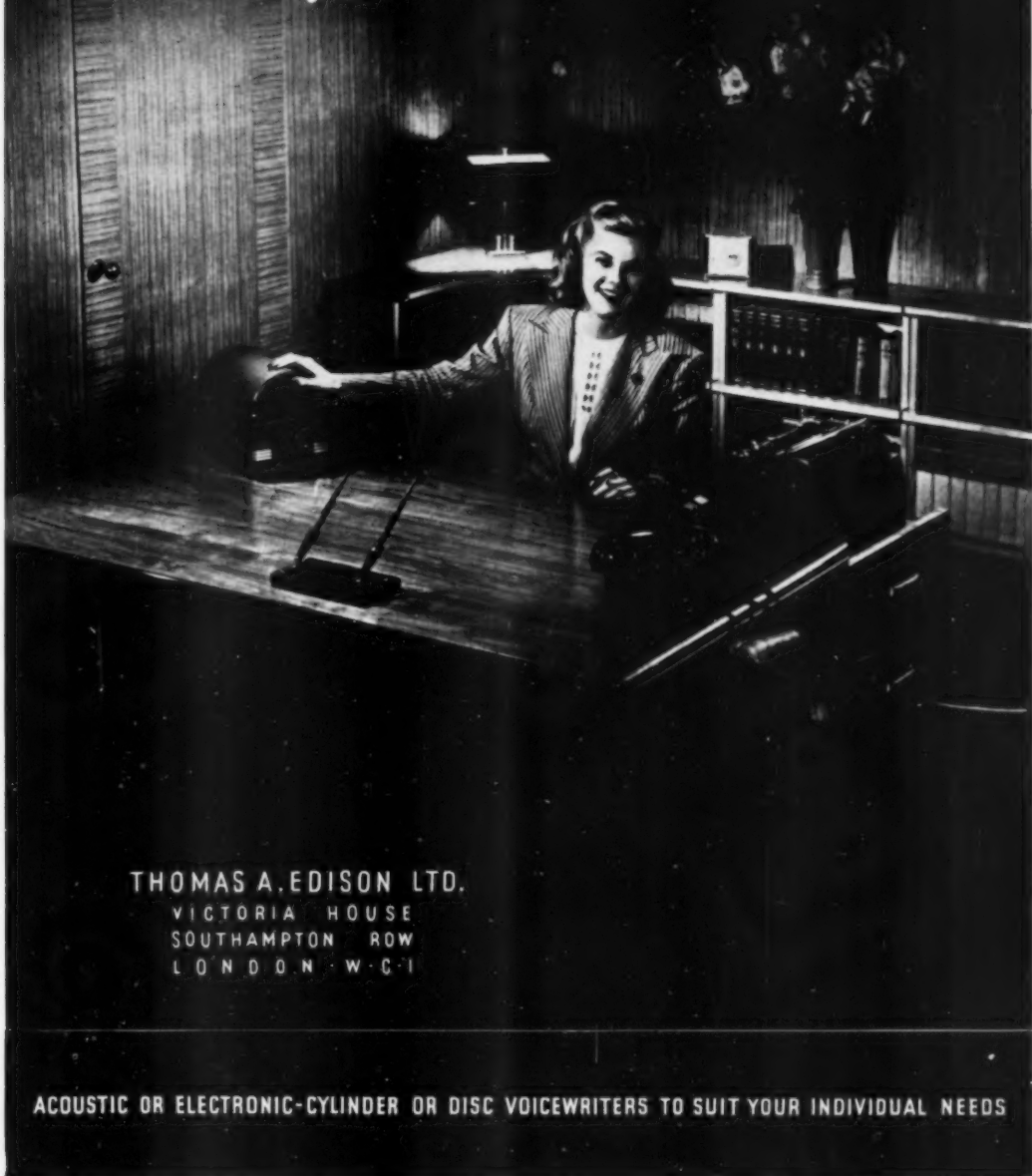
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# THE Ediphone FOR THOSE WHO PREFER THE *Cylinder Type*

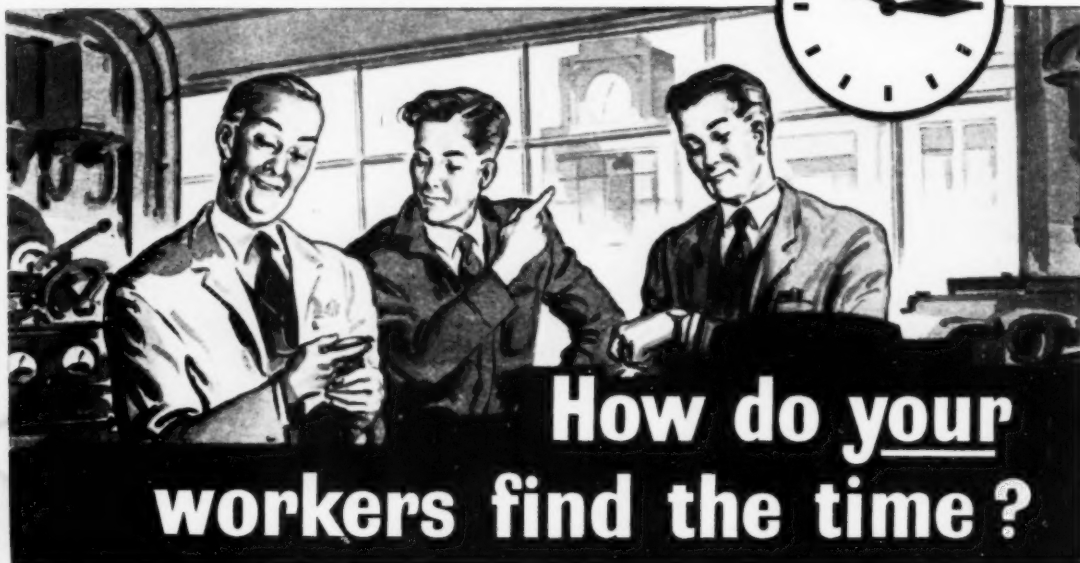


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ACOUSTIC OR ELECTRONIC-CYLINDER OR DISC VOICEWriters TO SUIT YOUR INDIVIDUAL NEEDS



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## How do your workers find the time ?

Do your employees confer anxiously as break and finishing times approach, taking time off to find out the time ?

Time searching costs industry far more than it should, especially as workers are apt to believe the fastest clock when it is a question of finishing the day's work.

T.R. Time Control puts an end to this and many other kinds of time loss in industry. The showing, sounding and recording of the correct time all the time is only a small part of what T.R. Time Control can do to make the time you pay for more productive.

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Spend a profitable moment now to write for full particulars.



**SERVICE**

***speeds production***

**TIME CONTROL** for making  
man-hours more productive.

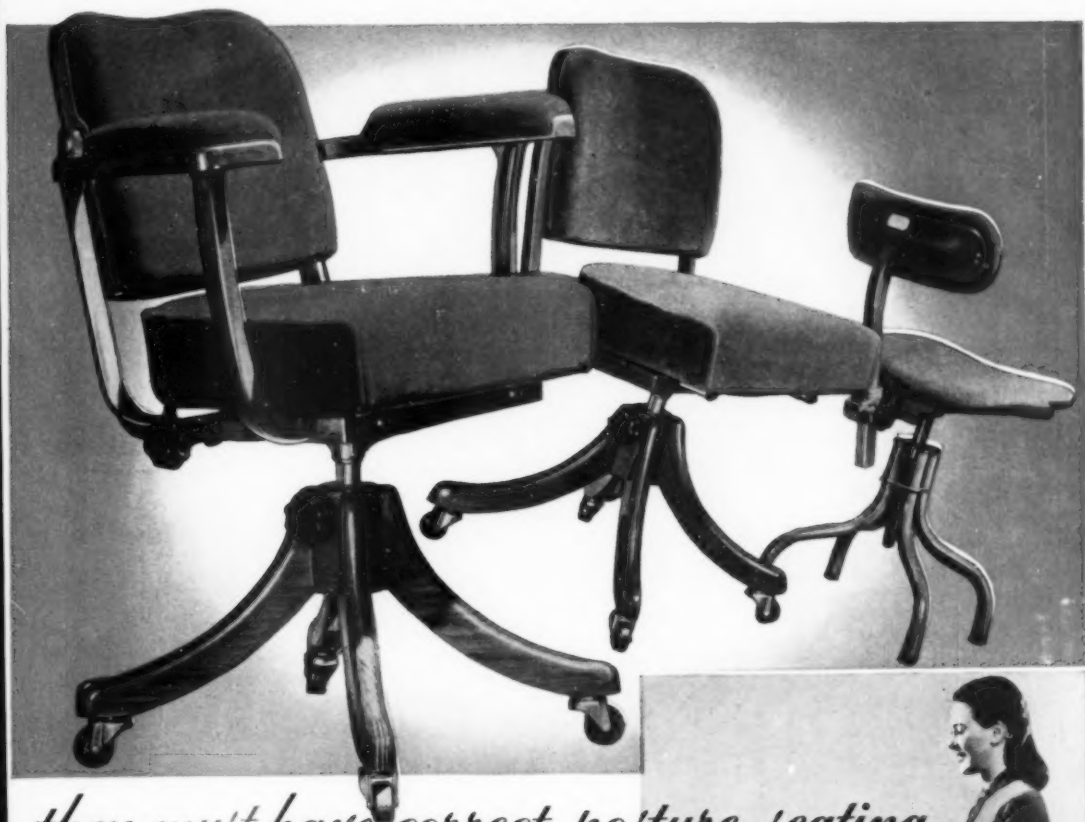
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for speedy speech contact.

**INTERNAL BROADCASTING**  
for staff location, time signals,  
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and music.

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W-P 422

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*they must have correct posture seating*

There is a suitable Tan-Sad Chair for everyone in your firm, from director to typist, offering maximum comfort and encouraging a correct sitting position. Everyone does better work in a Tan-Sad.

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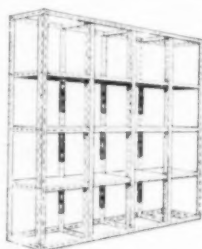
**SPECIALISTS IN SCIENTIFIC SEATING FOR INDUSTRY & COMMERCE**



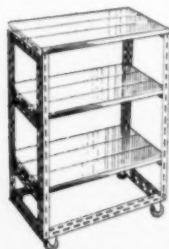
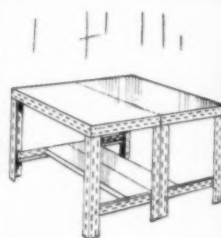
*How much longer for those work benches?*  
*Storage-No! Standard racks won't do!*  
*Those tables-ordered a month ago!*  
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*That machine guard-it doesn't fit!*

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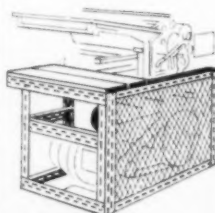
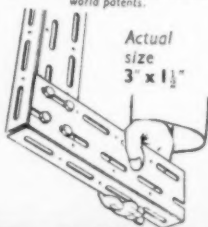
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# \*How and where people live, work, spend

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TO BUILD a marketing organisation or a sales campaign without the facts and figures contained in 'The Home Market' (1950 revised edition) is to shoot in the dark. For here is collected, tabulated and displayed a mass of information on one of the most fascinating subjects in the world — how other people spend their lives and their money. Such information — and in particular the trends that it discloses — is vital not only to all whose responsibility it is to plan and organise business, but also to every sociologist,

economist, administrator and politician.

Chapters in 'The Home Market' include 'The Future Population of Great Britain', 'The Social Pyramid', 'The Distribution of Incomes and Wealth', 'Household Budgets' and so on. Statistics are graphically set out in chart and pictorial form, and each section discussed in some detail by Dr. Mark Abrams of *The London Press Exchange Ltd.* and *Research Services Ltd.* 'The Home Market', first published in 1936, has been continually revised and enlarged since.

## \* THE HOME MARKET

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people  
can  
never  
find  
anyone'**



*You've used this phrase pretty often when you've had to hold on while a search is made for the man you want. You've been annoyed — and taken a poor view of the firm you're calling. But are you sure your clients are not kept waiting while a search is made for you? Do messengers have to run from office to office interrupting everyone's work when you are wanted? Or does your switchboard operator have to neglect incoming calls while she rings half-a-dozen extensions trying to find you?*

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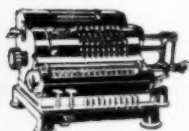
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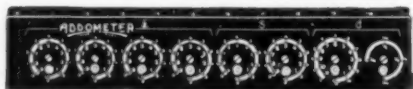


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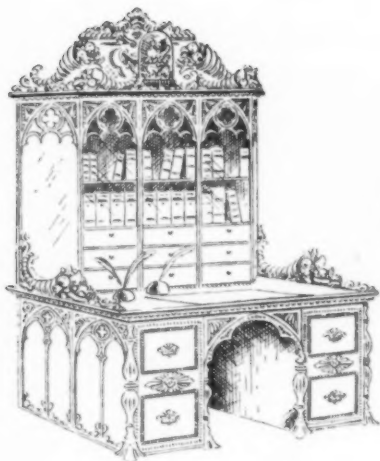
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*Craftsmen in Metal Office Furniture*

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THE  
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The DICTOREL is an entirely new concept in magnetic dictating machinery. The recording medium is simply a sheet of paper—called a Dictogram. You can erase this at will using the same sheet for thousands of recordings; post it or file it for permanent records. You can also record your telephone conversations—without attachment to the instrument.

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(SLOane 6198/9)

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Most of these uses have nothing to do with paint — yet a \*Harris paint brush does a first class job in every one. Which is why many factories that used to buy brushes haphazardly now specify Harris. It's common sense. The bristles won't come out of a Harris except under torture. The brushes last longer. The standard of quality is fixed and the brushes are guaranteed. And — as if all this isn't enough — there's the saving in cost through buying *one* brand from *one* source at agreed terms — quite a fat bonus!

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**and there's a Harris  brush for every one**

*\*There are 5 grades of brushes in the Harris range.*

CRC 111





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BUSINESS



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● These inexpensive machines carry a twelve months guarantee by the importers Gilbert Wood (A/M) Ltd., who have handled them for nearly thirty years.

**NOW  
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*Aid to Efficiency*

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From

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● The "Original-Odhner" calculators are easy to handle, need no trained operator, and yet are so efficient and inexpensive that if one is used by a junior clerk for ten minutes a day it will pay for itself within a year. Devices that would increase the cost and complicate the construction have been eliminated; the "Original-Odhner" is streamlined down to main essentials.

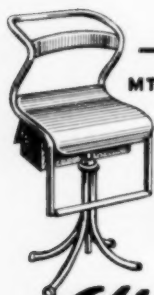
Write now, or 'phone, for full particulars of the range of six machines.

Sole Agents for Great Britain:—

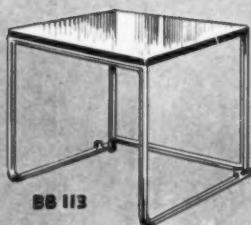
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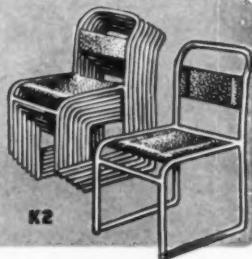
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*"... far less staff  
than would have been  
possible under  
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FOR  
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**TIMEKEEPING**

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## **SYNCHRONOME**

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*will solve these  
inseparable problems  
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Any time controlled installation can be  
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No pressing of a lever by  
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**The new CENTO 27 is different:** The paper sheet itself,  
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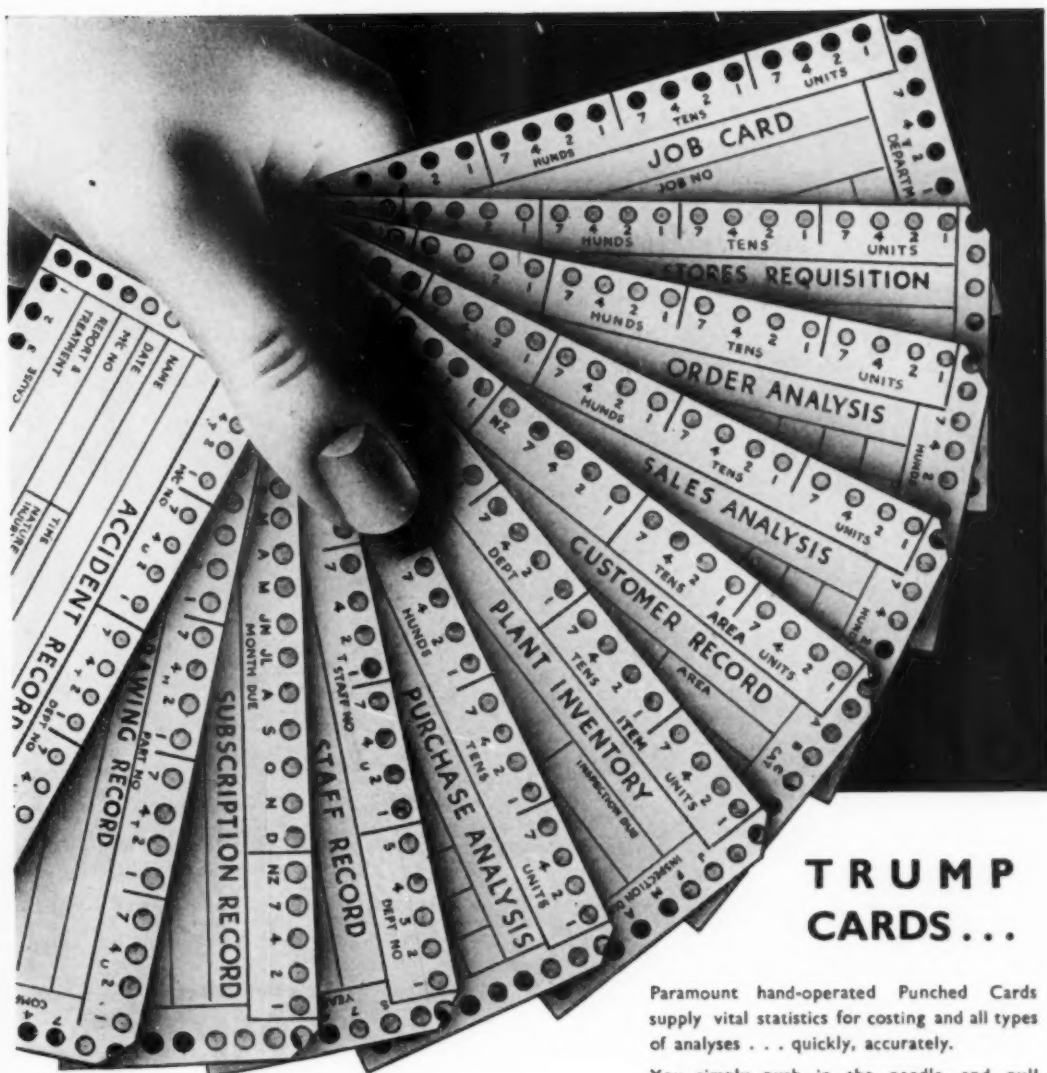
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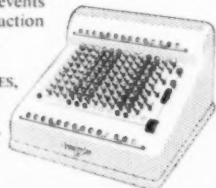
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# The MARCH of BUSINESS

## ARE WE DOWNHEARTED?

**I**N AN article, "What of 1951?" in our January issue, BUSINESS forecast hard times ahead. Since that date, the jeremiads have come thick and fast.

So gloomy are some businessmen to-day, indeed, that there seems to be a certain lack of proportion in their views. Things are certainly not too good, but they are not as bad as all that. A great deal of the panic over the so-called "return to a war economy" is completely unjustified.

In the '20's and early '30's, we spent three per cent. of the national income on the Armed Services. In 1943-44, the percentage rose to 51. The government's present proposals are to spend about 15 per cent. by 1953. Now, three per cent. can be taken as a minimum standard expenditure on defence in peace-time. In the last war therefore the drain of resources from civilian to military needs was an additional 48 per cent. of the national income. The maximum drain that it is now proposed to achieve by 1953 is only 12 per cent.

As the *Economist* has put it very pungently: "What we are now engaged in is one-quarter of the effort of total war, Cold war is, in economics, three-quarters peace."

The switch in British economy that lies ahead will thus be simply a larger repetition of the experience of mid-1938 to mid-1939, when a similar rearmament defence drive was welcomed with enthusiasm by the whole business community, and proved a great stimulus to business activity and prosperity.

Further, this switch in the economy will be felt very gradually. While it will affect severely many of the lighter engineering industries, it will not paralyse the whole range of consumer industries. On the contrary, they will continue to operate at only three to four per cent. below their pres-

ent capacity for some time. All we face is a very gradual recession in the consumer industries, whose most severe point will not be reached until 1953. In the meantime, it is reasonable to suppose that human ingenuity will increase production per man and per machine, develop the use of substitutes for scarce raw materials and generally make the best of the new conditions. Indeed, given any sort of reasonable economic freedom, business could well counter the greater part of this 12 per cent. drain before 1953.

**C**URRENT company reports also suggest that the gloom is being overdone. Following close on the heels of the 80 per cent. jump in trading profits announced by Imperial Chemical Industries, Ltd., consolidated operating profit of the Dunlop Rubber group shows the spectacular improvement of 87 per cent. Last year's figure was £17,260,116, against £9,480,850 in 1949. Group profits of Morris Motors, Ltd. rose from £2,631,426 in 1949 to £7,136,038 in 1950—a rise of 171 per cent. Figures like

these can stand a good deal of recession before shareholders need start worrying.

## MATERIALS THE CRUX

**C**ONDITIONS to-day differ in two respects from those in 1938. In the first place, the rest of the Western World is also re-arming, and is therefore bidding against us for materials and supplies now. Secondly, many governments—our own among them—are rigidly doctrinaire, instituting restrictive controls on industry too suddenly and arbitrarily.

Alarmist predictions have been made, in particular, of a famine in raw materials. Here, again, a proper perspective can be gained from the *Economic Survey of Europe* recently published by the United Nations Economic Commission for Europe. Shortages of raw material will probably prevent Europe from securing the 13 per cent. increase in production in 1951 that might otherwise be possible, but it is unlikely that supplies will be scarce enough to



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cause any large-scale unemployment.

Steel supplies will be at about the same level as the last quarter of 1950, while supplies of five non-ferrous metals will be somewhat greater than in 1950. Given reasonable priority programmes and no hoarding, essential production should be met without difficulty. The supply situation in cotton, wool and rayon, on the other hand, is such as to make an actual reduction in total European output almost certain.

The basic cause of the scarcity is, of course, increased demand, particularly from the United States. But production of raw materials in Europe has lagged; output of all basic materials in Europe has risen substantially less than industrial production, and in some cases, such as coal, sulphur, timber and iron ore, production has fallen considerably. For this, Europe alone is responsible, through its failure to adopt suitable economic policies. What is wanted, suggests the *Survey*, is greater investment in coal and iron ore production, and greater use of the price mechanism to stimulate production. Price controls may limit inflation, but they also inhibit necessary adjustments and may lead to the wasteful use of resources.

FROM a handbook written by John Langdon-Davies for the National Physical Laboratory at Teddington to celebrate N.P.L.'s jubilee (H.M.S.O., 4s.), we call the story of an earlier director who satisfied himself that the Biblical Ark was a sound and seaworthy craft. He built a model to the specifications laid down in "Genesis" and had it tested out by the marine (ship-testing) division.

## TIME STUDY STUDIED

PRELIMINARY details have now been released of results obtained in the first nation-wide survey of time study practice, carried out last November by the Work Measurement Research Unit of the University of Birmingham. (Details of the methods used were

JULY, 1951

## SALIENT FIGURES OF THE MONTH

### "BUSINESS" INDICES

	Latest Month	Increase (+) or Decrease (-) on Month Ago	Increase (+) or Decrease (-) on Year Ago
Production (1946=100)	* 141.3	+ 0.4	+ 9.4
Purchasing Power do.	* 119.1	+ 0.2	+ 0.9

### MANPOWER

Total manufacturing industries (thousands)	* 8,678	+ 8	+ 276
Cotton spinning and weaving do.	* 334.9	+ 0.5	+ 5.1
Coal (on colliery books) .. do.	703	+ 1	+ 1
Reg. unemployed (U. K.) .. do.	280.6	- 21.8	- 76.7

### PRODUCTION

Index of production (1946=100)	* 142	- 8	- 2
Coal (average weekly output) .. (thousand tons)	4,605	+ 362	+ 623
Steel ingots and castings (do.) .. do.	323	+ 5	- 1
Cotton yarn (do.) .. (million lb)	17.73	+ 1.95	+ 2.08
Woven wool fabrics (do.) .. (million linear yards)	37.87	+ 0.57	+ 5.33
Passenger cars (do.) (thousands)	9.60	+ 0.8	+ 0.02
Commercial vehicles (do.) .. do.	5.37	+ 0.61	+ 0.32
Permanent houses completed .. .. do.	* 16.76	+ 2.78	- 2.63

### TRADE

Value of imports (£ million)	+ 338.0	+ 34.6	+ 109.3
Value of exports .. .. do.	+ 229.8	+ 22.2	+ 4.2
Freight train traffic (million tons)	+ 5.4	- 0.09	+ 0.24
Retail sales .. .. (1947=100)	* 153	+ 12	+ 20

### FINANCE

Currency in circulation (£ m.)	1,282	+ 4	+ 24
Deposits in London Clearing Banks .. .. do.	6,130	+ 93	+ 287
Provincial cheque clearings (av. working day) .. do.	7.74	- 0.52	+ 1.06

### WAGES AND PRICES

Weekly wage rates (1947=100)	118	+ 1	+ 8
Retail prices (1947=100)	+ 121	+ 2	+ 7
Wholesale prices (1930=100)	+ 319.6	+ 0.8	+ 54.4
Basic materials (1949=100)	+ 202.4	- 7.0	+ 77.2
Intermediate (1930=100)	+ 383.6	- 2.5	+ 100.9
Import prices (1950=100)	+ 142	+ 6	+ 45
Export prices (1950=100)	+ 118	+ 3	+ 19

g Four weeks to April 22, 1951

\* March, 1951.

+ May, 1951

All other figures refer to April, 1951.

## "BUSINESS" INDICES (1946=100)

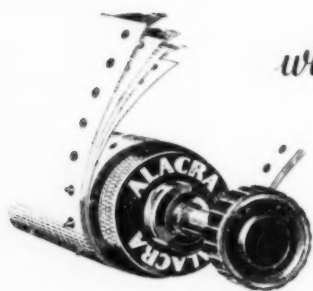




*When you are using  
the best method of  
form feeding, seasonal  
rushes of office work need  
not cause undue fatigue  
and a resultant  
crop of mistakes*



*Keep up production  
Keep down fatigue*



*with* **ALACRA**

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**W. H. SMITH & SON LTD.**

ALACRA FACTORY, WESTERN AVENUE, ACTON, LONDON, W.3, ACORN 5801

described in the November, 1950, issue of *BUSINESS*).

Seventeen meetings were held in 12 centres, attended by about 750 time study engineers from 286 firms. They were drawn from a wide range of industries, and by no means confined to engineering. Films were shown at each meeting illustrating typical industrial and laboratory operations, and each engineer was asked to compute normal times for all the operations. These were then studied and compared with provisional values established by a control group of time study engineers. Opportunity was given for discussion of both procedure and quality of individual studies.

Engineers were asked to give the rating values for both normal performance and standard (incentive) performance. Where only one value was used as a datum, this was given separately. Though 75 per cent. of the engineers used a rating scale based on a normal performance rating of 60, there were 37 different rating scales quoted.

The full analysis of the survey, to ascertain the quality of time study rating, is now being carried out. The results and interpretation will be available later in the year. The Research Unit is also engaged on the analysis of a comprehensive series of studies taken on the shop floor in the works of a number of co-operating firms. This new series has been designed to provide additional data which will be used to estimate the effect of a number of variables on time study practice, additional to those that can be assessed from the national survey results.

**T**HE full programme of the International Advertising Conference of 1951, organized by the

#### HOW THE CHART IS CALCULATED

The chart, which is reproduced from the *Economic Survey of Europe* of the United Nations Economic Commission for Europe, shows index numbers of production for various sectors of the world during the last four years.

JULY, 1951

## TRENDS IN PRODUCTION



# BETTER LIVING-

# THROUGH INCREASED PRODUCTIVITY

## A LANSING BAGNALL CASE HISTORY

SUBJECT:

## SUGAR

Using manual methods, a one ton load needs at least two and often four men to handle it speedily, but by using the Lansing Bagnall Pallet truck only one operator is needed and the load is taken just where it is needed.

The introduction of these trucks has speeded up the loading of road vehicles by at least 10%.

Pease Transport Ltd. have found that Lansing Bagnall vehicles have been so successful in increasing materials movement that they have just taken delivery of still more Power Pallet trucks.

The science of Materials Handling is very necessary to Pease Transport Ltd. who distribute Messrs. Tate and Lyle's sugar and syrup from their 1,800 tons capacity depot at Wandsworth.

Playing their part with the materials handling equipment are three Lansing Bagnall Power Pallet trucks. These pedestrian controlled electrically driven trucks can unload a 15 ton lorry in almost as many minutes, handling one ton loads with ease.



"MECHANISED MUSCLE"



**LANSING BAGNALL**  
LIMITED  
BASINGSTOKE HAMPSHIRE  
BASINGSTOKE 1010

★ Can our specialists help solve YOUR materials handling problems — write to us to-day.



*Advertising Association of Great Britain, has now been published. Theme of the conference is "The Tasks of Advertising in a Free World." After an initial reception on July 7th, the conference will be formally opened by the Duke of Gloucester on July 9th, and continue until the 13th.*

## INFORMATION PLEASE

**A** COUPLE of months ago, a new device for preventing the cord of a standard hand-microphone telephone from getting tangled was pictured in *BUSINESS's* feature: New for Your Office. It drew nearly a hundred enquiries from readers with tangle trouble in their offices. And—if past experience is anything to go on—odd enquiries will continue to trickle in for the rest of the year.

These regular features, comprising brief announcements of the arrival of manufacturers' brain-children for both office and industry, go back for many years. But they are by no means Cinderellas, and a good deal of editorial attention is given to them. For every item that appears, many more are screened.

Reader response has increased constantly and—in recent years—rapidly. The average number of enquiries received during the first four months of this year was exactly four times as great as in

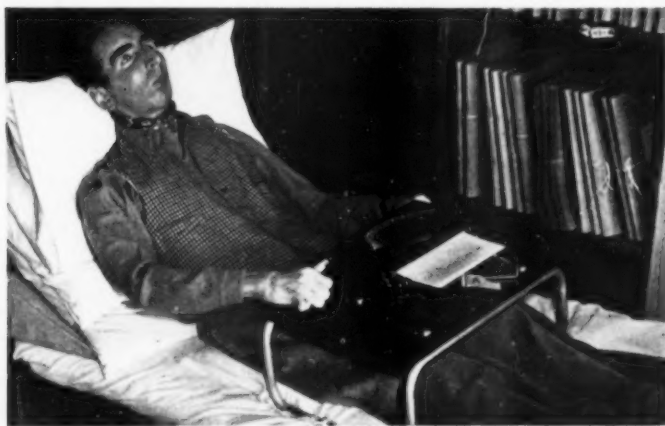
the corresponding period of 1949. They come from all over the United Kingdom, and from Australia, New Zealand, South Africa, India and America. In addition to specific requests for further information, many ask for advice on any subject under the sun. Indeed, the executive who deals with them is known to his colleagues as "the poor man's consultant."

Our space is limited; our coverage wide. The selection of items is difficult. We can only be guided by readers' interests, and the only way in which we can ascertain these is to chart the comparative response to different items published. Hence we ask enquirers to write to us, rather than to the manufacturer.

**C**AR ALLOWANCES cause much heart-burning in certain firms. The United Commercial Travellers' Association of Great Britain and Ireland has now, after "widespread research," produced a standard scale of annual allowances of £174 for an 8 h.p., £200 for a 10 h.p., and £226 for a 12 to 14 h.p. car. These figures cover depreciation, comprehensive insurance, road tax, repairs and renewals, servicing, cleaning and garaging at home. They can be reduced by 15 per cent. to cover private use of the car. Petrol, oil, parking, etc. on journeys are additional.



On page 68 of this issue appears a picture feature dealing with the mechanical handling equipment at the Alperston Bottling Co. Prominent in the planning of this plant was the general manager, Mr. Leonard C. Snelling. He is seen above, alongside the automatic stopper ring machine he invented. This machine does the work of four people and speeds up the tedious job of placing rubber rings on beer bottle stoppers—an operation which until now has defeated mechanization.



Mr. Peter B. Nye, head of St. Dunstan's team of research experts, has adapted a standard typewriter so that it can be used by a man paralysed and blind and unable to sit up in bed. The man, Mr. Peter John Harris, a young ex-soldier, wants to become a journalist.

## SHUTTLELESS LOOM

**A** LOOM without a shuttle, which might well revolutionize the textile industries, has been developed by an Estonian engineer, Max Paabo. A refugee employed in a big textile mill in Norrköping (Sweden), Mr. Paabo had the idea of carrying the thread on a loom by air currents instead of by mechanical means. He built a model from scrap; it worked, and now a first series of ten shuttleless looms has been built and is ready to go into operation.

The main advantage of the P.M. loom, as it is called, is said to be its great speed. The P.M. is claimed to reach double the speed of the conventional loom, and is cheaper to produce and simpler to handle.



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## How 46 Firms make Their Suggestion Schemes Work

### A "BUSINESS" SURVEY

**O**NE way in which to secure higher productivity is an effective suggestion scheme. Experience with such schemes, however, varies widely from firm to firm; some have yielded spectacular results, others have failed.

"We are trying to discover why this is so, and to find out what factors make for success in running a suggestion scheme. To get an overall picture, we are conducting a survey of existing schemes, which will enable us to spotlight those methods which have proved successful in actual practice."

So ran the opening paragraphs of a covering letter that *BUSINESS* recently sent out with a detailed questionnaire to some 2,000 firms, whose names were chosen at random from a miscellaneous trades directory. Here are the results of the enquiry.

#### The Sample

A total of 113 firms returned the questionnaire completed, but of these only 46, or just over 40 per cent., were operating a suggestion scheme. Of those who were not, a number reported that they had had a scheme of this type in the past, but had dropped it because

With materials and labour both short, it is brainpower that gets the most in output. But brainpower is not restricted to top management. As an engineering firm with 17,000 workers put it to *BUSINESS*: "There is always something the experts miss."

To see how British industry was using their workers' brains, *BUSINESS* asked a random sample of firms for details of the way they ran their suggestion schemes.

Here are the answers.

of unsatisfactory results, while others (about an equal number) intimated that they were thinking of introducing one.

The 46 firms with active suggestion schemes covered a wide range of industries, from aircraft to chocolate manufacturers, and included all sizes of firms, from minnows with less than 50 workers to titans with more than 17,000. Taken together, they form a good representative cross-section of British industry.

One of the immediate lessons learned from the survey is that the success of a suggestion scheme has nothing to do with the size of

the firm running it. One of the most effective schemes described was run by a firm of welding equipment manufacturers with only 140 workers on its books. The small firm *can* (though it not always does), obtain just as good results as the large.

#### Judging the Schemes

The problem remains: what is a successful scheme? *BUSINESS* adopted two yardsticks: firstly, whether the firm running the scheme considered it successful, and second, the number of concrete suggestions the scheme had produced in 1950.

Of the 46 firms, eight expressed themselves "extremely satisfied," 24 "fairly satisfied," and 12 "just

The illustration above is reproduced from a works poster of British Industrial Plastics Ltd.

## SUGGESTIONS

We claim no monopoly of brains and in works and offices of this size, there is generally something which escapes our notice.

You are on the spot—if any aspect of production can be improved, or waste avoided or quality improved, why not put your thoughts into a suggestion? You might pick up a handsome price.

*We have now paid out  
£1500  
including two awards of £1000*

JOHN  
PHILLIPS LTD

Johnson & Phillips Ltd.

## Posters can sell the scheme...



Hoover Ltd.



Hoover Ltd.



British Industrial Plastics Ltd.

satisfied." One firm was honest enough to cross out the printed matter on the questionnaire and express themselves "not satisfied," while one would not commit themselves.

On a more objective plane, the actual number of suggestions received naturally varied with the size of the firm. Since most, however, gave (as requested) the number of workers employed, it was possible to evaluate comparative figures for the number of suggestions received per 100 workers employed. The picture that emerged was as follows:—

Suggestions received per 100 workers	No. of firms
0-4 ... ..	19
5-9 ... ..	12
10-19 ... ..	2
20-29 ... ..	3
Over 30 ... ..	2
Unstated ... ..	8
	46

A caveat must be entered here. Some firms who had abandoned or were not very satisfied with their schemes suggested that the suggestions they had received were trivial, and the handling of them a waste of time. The inference is that the success of a scheme must be judged by the suggestions put into operation, rather than by those received.

This view, however, is not sup-

ported by firms receiving large numbers of suggestions. The percentage of suggestions received that were actually accepted varies widely:—

Percentage of suggestions accepted	No. of firms
10-19 ... ..	4
20-29 ... ..	7
30-39 ... ..	9
40-49 ... ..	6
50-59 ... ..	4
Over 60 ... ..	8
Unstated ... ..	8
	46

There seem to be three main reasons for this variation. The first is the nature of the business concerned. A firm of instrument makers received only three suggestions in 1950. They were able, however, to adopt all three and were quite satisfied with the results. Here the process was of a complicated technical nature and the suggestions involved a considerable amount of technical skill on the part of the workers, which had been applied both to design and to practicability. Another firm engaged on simple assembly operations got a very large number of suggestions of which only a small percentage proved practicable. The net result, however, was practically the same in both cases.

The second factor would seem

to be the level of efficiency within the firm. There is obviously less room for improvement in an efficient than in an inefficient firm and hence less scope for the adoption of suggestions. Hoover, Ltd. got over 50 suggestions per 100 workers in 1950—the most exceptional result reported in the survey. The firm adopted only 10 per cent. of these but were extremely satisfied with the results. (So, incidentally, were the workers, who received over £2,000 in rewards.)

To abandon a suggestion scheme because the majority of suggestions prove impracticable is short-sighted and even illogical. All businessmen are seeing salesmen every day. If it were suggested that a businessman should forego seeing all salesmen since he bought from only one in three, the idea would be dismissed as ludicrous. Yet this is an exact analogy. In the words of the firm of instrument makers quoted, "We have learned that in order to maintain a high standard of suggestions in our factory, one cannot expect too much."

The third important factor in determining both the quantity and quality of suggestions received is managerial enthusiasm. This was stressed by practically every firm that had a successful suggestion scheme. "The main lesson learned

## so can booklets...

is that unless there is goodwill and enthusiasm at high management levels for the scheme," commented Johnson, Matthey & Co., Ltd., "the number and quality of suggestions suffer considerably."

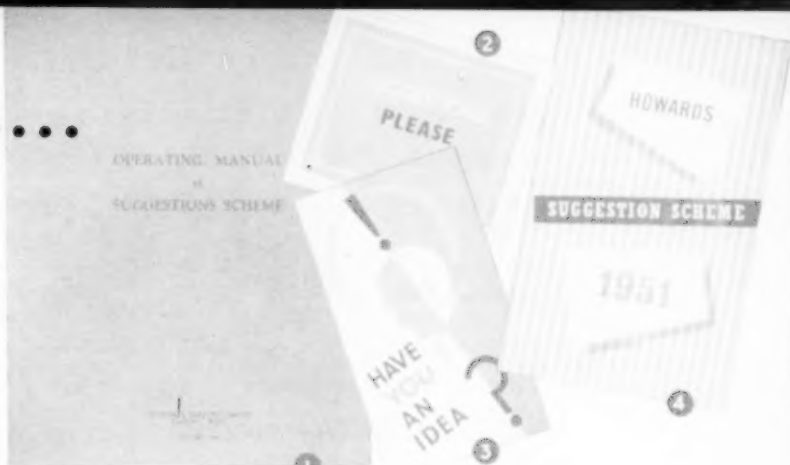
"The suggestion scheme must have the support of supervision and top management if results are to be satisfactory," write Hoover, Ltd. "Top management support the scheme wholeheartedly and this ensures that company policy in regard to the scheme is pursued with the utmost efficiency."

It has been possible to measure objectively the enthusiasm of management for the schemes in the various firms covered by the survey by the simple expedient of calculating the amount spent on awards during 1950. The figure varied with the size of the firm, but the total amount paid in awards per 100 workers employed was as follows:—

Total spent in awards per 100 workers	No. of firms
Under £5 ...	24
£5 to £10 ...	9
Over £10 ...	6
Unstated ...	7
	46

When the amount spent in awards per 100 workers is plotted on a chart (fig. 1) against the number of suggestions received per 100 workers, it becomes clear immediately that there is a significant relationship between the two. (In technical parlance the correlation coefficient is +0.58.) In other words, the hard facts deduced by this survey show conclusively that in running a suggestion scheme, as in all other forms of business activity, the more you pay the more you get.

The argument would appear to be true, not merely of total expenditure, but also of the amount of the award for each suggestion received. Figures for minimum, average and maximum awards made in 1950 by the 46 firms were as follows:



- 1 Vauxhall Motors, Ltd.
- 2 Chance Bros., Ltd.
- 3 Thomas Hedley & Co., Ltd.
- 4 Howard's, Ltd.

### MINIMUM AWARD

Amount of award	No. of firms.
Under 10s. ...	13
10s. to £1 ...	18
£1 to £2 ...	9
Over £2 ...	4
Unstated ...	2
	46

### AVERAGE AWARD

Amount of award	No. of firms.
Under £1 ...	3
£1 to £2 ...	15
£2 to £3 ...	13
£3 to £4 ...	5
£4 to £5 ...	4
Over £5 ...	3
Unstated ...	3
	46

### MAXIMUM AWARD

Amount of award	No. of firms.
Under £5 ...	8
£5 to £10 ...	1
£10 to £20 ...	5
£20 to £50 ...	12
£50 to £100 ...	13
£100 to £150 ...	1
Over £150 ...	4
Unstated ...	2
	46

Here again a study of the returns shows that the most successful schemes are those in which the awards, both minimum, average and maximum, are high. The incentive value of a maximum award of £1, as was quoted in certain cases, seems insufficient to overcome the inertia of the workers concerned.

While management enthusiasm is obviously the first essential for success, the insistence with which

- 1 British Industrial Plastics, Ltd.
- 2 Rowntree & Co., Ltd.
- 3 Michelin Tyre Co., Ltd.

## and stationery





each management sells this enthusiasm to the workers is of equal importance.

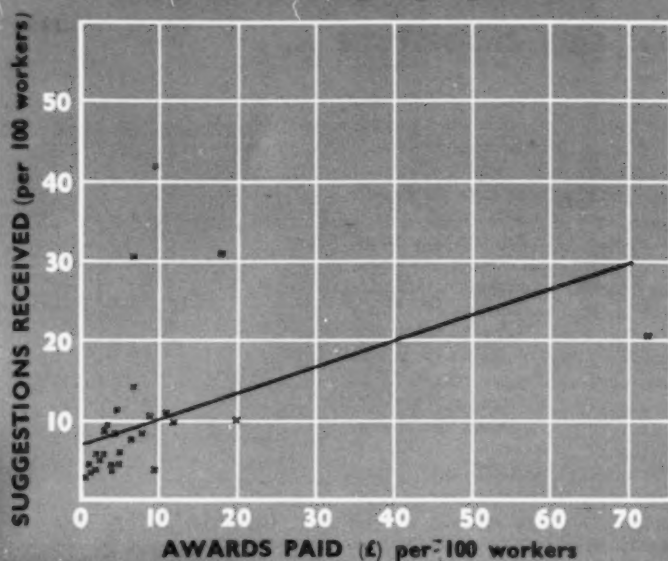
"The fundamental lesson we have learned," write Brocklehurst-Whiston Amalgamated, Ltd., "is the necessity of consistently keeping the scheme alive. We have found it most essential to devise a constant means of selling the scheme to the employees. Without serious efforts on these lines interest soon falls off. In our opinion the suggestions committee has got to give, in its own way, just as much care and thought to publicity as a sales



(Above) The black line shows the average response that may be expected from any given expenditure on awards.

(Left) Mrs. John Cadbury presents a cheque for £200 to one of Cadbury's employees—the highest single award reported in the survey.

## Results by payment



branch would give to marketing its products."

Workers are inherently conservative, inherently suspicious of anything that appears to be giving management something for nothing—or below its market price. They must be convinced that it is in their own interests to make the scheme a success.

This salesmanship, too, must be continuous since initial enthusiasm always declines. For one thing, as more and more suggestions for improving efficiency are put into practice, the room for improvement—and hence for further suggestions—steadily diminishes. For another, human memory is notoriously short and the £50 that Bill Jones got for his suggestion recedes into oblivion as time goes on.

Businessmen know this when

they advertise their products; even household names like Guinness and Players have continuously to be kept before the public eye by reminder advertising. Similarly, workers must constantly be reminded of the scheme's existence and of the benefits they may obtain from it.

The most obvious point of departure for such a selling campaign would appear to be a simple description of the scheme printed in a leaflet or handbook, giving the workers the bare facts on how to make a suggestion. It is surprising to find that only 19 of the 46 firms publish a handbook of this kind. These 19 handbooks vary widely from poorly mimeographed leaflets to elaborate and expensive booklets printed in two colours and illustrated with line blocks.

Perhaps the most successful compromise is the "Operational Handbook" published by Vauxhall Motors, Ltd. This consists of 30 quarto sheets of paper multilithed and stapled between boards. No attempt is made in this handbook to sell the scheme (this is left to other media such as posters and house organs), but full details are given of the organization of the scheme. Precise instructions are included on how to make a suggestion, what will happen to it when made and what award, if any, will be made. As an appendix, a sample of every document involved from a facsimile suggestion to an official notification of a final award, is printed in precisely the form in which it reaches the worker. The only disadvantage of such a publication is its size; many of the other booklets

Leaflets of rules and regulations are more in the nature of reference books and if the worker has access to a copy at will, either in a book-case at home or at a central point in the factory, this is usually all that he needs.

**SUGGESTIONS 1950**

TRAFFIC REPR  
WORKING CHAIRS  
CLARK A  
TIE 1 A (LURING BAG)  
LAR A (GATE TUBES)  
CL 2 A & CL 3 A & CL 4 A  
BAYE STUBS  
COTTON DOUBLING  
SITS  
L P S & G G S  
L T Y & L T  
INTERNAL TRANSPORT  
MUDS (ENGINEERS)  
MACHINE TEND

FACTORY TOTAL

JAN FEB MAR APR MAY JUNE JULY AUG SEP OCT NOV DEC

0 10 20 30 40 50 60 70 80 90 100

JULY, 1951

## "BUSINESS" SUGGESTION SCHEME ENQUIRY

- and that the actual wording should be limited to a single phrase.

The house organ was almost as popular as the poster, with 29 firms reporting its use to promote suggestion schemes. The great advantage claimed for it was that the steady flow of suggestions and awards is always news and always new. The house organ is thus a dynamic source of publicity, whilst the poster must necessarily be static. It brings in, too, the human element. One firm regularly prints portraits in its works magazine of all workers receiving awards for suggestions. Others print lists of suggestions received, those accepted, the authors of them and the amount of award paid.

Policy on the amount of publicity given to these various factors varied. Of the 46 firms, 25 publish the suggestion and the name of the worker, four publish the name of the worker only, six publish the suggestion only and ten publish nothing. Only two firms publish any details of suggestions that were not accepted.

by pay packet stuffers (three firms). One firm volunteered the information that they regularly used broadcasts over the factory loudspeaker system during meal-times when workers were assembled in the canteen.

Three firms, all with highly successful schemes, strongly emphasized the necessity of selling the schemes, not merely to workers but to foremen and charge hands—the first line of supervision. They did not refer to direct participation by foremen in the schemes (only 23 firms allowed foremen to participate in their schemes and then for the most part only with suggestions covering the work of departments other than their own) but to the necessity of getting the foremen to support and promote the scheme among the workers under their control.

The Dunlop Rubber Co., Ltd., achieve this by fixing departmental targets for suggestions. In November each year the general works manager calls a meeting of departmental managers to fix targets of various kinds for the forthcoming year. On the basis of

45

# Saving waste by a standardization programme

By C. BRYANT



Standardization saves labour—but it can also save precious raw materials. This, the second of three articles on how leading firms are tackling waste prevention, describes how the Metal Box Co. Ltd. have steadily implemented a policy of reducing inessential variations between similar products sold to different customers. They have thus been able to order raw materials in the most economic quantities, to mechanize as completely as possible and to secure the maximum output of finished products from limited allocations of raw materials. The programme, carried out successfully, has brought its own reward.

**I**N THE last few years, standardization and simplification have become fashionable recipes for increased productivity. In the main, the arguments put forward in their favour have been in terms of reduced labour costs—more output from the same, or fewer, workers, through increased mechanization.

In a situation in which labour has been scarce—scarcer even than raw materials—this is perhaps only natural. The worsening of the raw material position, however, is now easing the labour shortage, and management must turn their attention again to the problem of eking out insufficient material supplies. The case for standardization might thus seem, temporarily at least, to lose much of its validity.

But, properly handled, standardization can save materials to the same extent, or more, than it can save labour. It is the special order, the short run, that fills the scrap bin and drives the purchasing officer to despair. A carefully planned programme of standardization, both of bought-in components and of manufactured products, will secure a greater output from the same quantity of raw materials, and reduce scrap to an absolute minimum.

One firm that has found this to be so is the Metal Box Co. Ltd. Their experience of standardization goes back long before the war, and is based on a balanced appreciation of the contribution that it can make to the reduction

of all costs—labour and material alike.

It is true to say that, in the average metal can, the cost of materials is approximately four or more times that of labour. Here was a case where concentration on material saving paid off, since there was obviously greater elbow room for effort.

Attention was first directed towards raw materials—in this case tinplate sheets. To secure maximum economy with technical efficiency, Metal Box ordered their tinplate from the rolling mills in special sizes and qualities for each job. (This was, of course, in happier days before the war. Today, choice is restricted, and only for certain uses, such as the manufacture of food products, may special sheets be specified. Other tins have to be made from "wasterplate," i.e. tinplate rolled to food plate specification but rejected because of minor flaws. And rejects obviously cannot be specified in advance).

Where the tinplate mills roll to order, as in the case of food plate, it is obviously economical for those orders to be as large as possible.

Here, the Metal Box Company has been able to help its suppliers and customers alike by using certain sizes and qualities of sheets for many different types of food container.

Thus Metal Box started a steady progress towards the standardization of their final products. It was not an easy progress. They

were selling in a highly competitive market. If the customer insisted that he wanted a can of a particular shape or size, they made it for him (and still do)—after pointing out that they could offer a standard size at a lower price. To-day, Metal Box will still make you practically any sort of can you want—but the hard economic facts of life have tended to channel the great bulk of their output within the margins of a number of well-tried standards.

The trend towards standardization has followed four well-defined phases. The first is a careful study of the particular type of can being made for a manufacturer. This initial study may or may not reveal scope for standardization. Even if it does, the manufacturer may not be prepared to accept any change. The study will not, however, be altogether wasted, even if standardization proves impossible. Many designs for metal cans were originally produced in the halcyon days when there was no shortage of tinplate, and contained more metal than was strictly necessary for their function. The extra cost of the surplus metal (then quite small) was considered to be offset by the sales appeal of a more unusual pack.

Many such well-tried designs have remained unaltered for years, though conditions have changed. The surplus metal that was once well justified is to-day a liability—but a liability that has been forgotten. Its elimination would mean more cans from a limited allocation, and this preliminary

study has revealed and destroyed many such sources of waste. In one case, a circular 2-oz. tobacco tin was re-designed so as to cut off a full 4in. of metal from the lid without detracting in any way from its performance. The basic design — concerning which the manufacturer set great store—remained unchanged.

In the second phase of their move towards standardization, Metal Box have helped to produce containers more economically for manufacturers of competing products. In such cases, different brands of the same basic commodity were being packed in containers that differed only fractionally in size and shape from one another. The acceptance of a common size of pack would make little difference to the sales appeal of the individual product—but a considerable difference to the cost of the container.

The vital differentiation between brands has been effectively maintained by printing the tins in different colours and combinations, according to the designs of the manufacturer.

The third phase arose from war conditions. Under war-time regu-



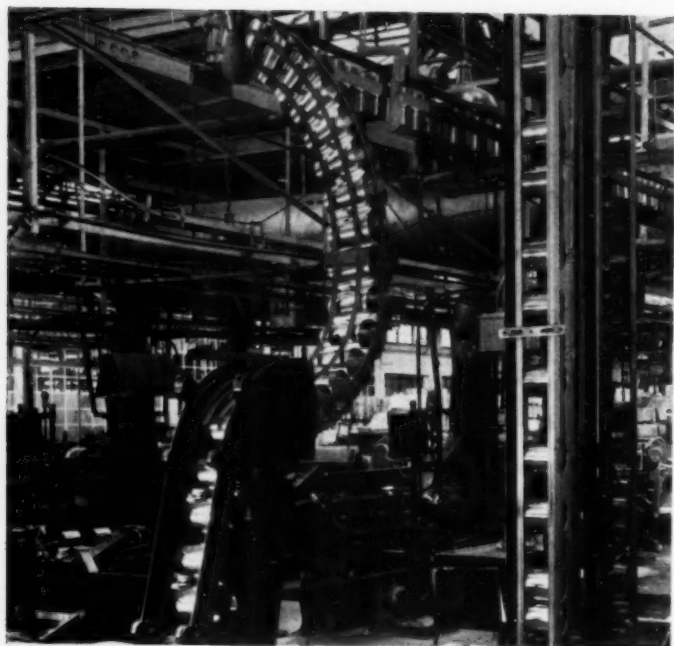
## The Metal Box 4-Point Plan

1. **Continuously examine all finished products to determine whether re-design will enable economies of raw materials to be made.**
2. **Where similar, but not identical, products are being manufactured for two or more customers, suggest minor modifications which would enable raw material differences to be eliminated without sacrificing differentiation in end product.**
3. **Where a demand can be foreseen for a new product as the revival of an old, produce a prototype ahead of the demand, and sell this as a standard.**
2. **Where standardization does not exist and agreement among customers proves impossible, design and sell a standard of your own, while continuing to fill non-standard orders.**



Tinplate today is as scarce as the contents of tins.





Only by rigorous standardization of sizes and qualities of raw material can the high productivity, which is the counterpart of mechanization, be obtained.

lations, a number of types of pack had to be abandoned. Production lines were dismantled. When production could be resumed after the war, the field lay wide open. Most customers had forgotten the details of the original packs, and the arguments in favour of maintaining traditional variations had lost their force. The tin box trade used this opportunity to move towards further standardization. An example of this was the 1-lb. grease tin. When the war ended, Metal Box saw that there would be a demand again for such tins. Their technicians therefore got to work and, on the basis of their pre-war experience, designed what they considered to be the best possible shape and size of tin to hold and deliver easily 1-lb. of grease. Prototype tins were prepared, and when the oil companies made their initial enquiries, Metal Box were able to produce them and say, "This is our 1-lb. grease tin." The companies tested the tins, approved them, and Metal Box were enabled to lay down a production line and

will be able to order bulk quantities of tinplate as soon as conditions allow.

Nor did the process stop here. The wider the basis of the standard, the greater the saving in costs. Metal Box therefore looked for further possible users of the standard tin. Other trades were considered. To-day, products as

unlike as grease and coffee are packed into tins embodying a number of identical components.

The fourth phase of Metal Box's progress (fourth in degree rather than in time) is epitomized by a frankly adventurous approach. It is a convincing indictment of the theory that the large, multi-factory concern plays for safety and will not take the risks inevitable under private enterprise.

Before the war, a gallon of motor oil was being sold by a number of oil companies in different types of can—oblong and square. Metal Box realised the wastefulness of this diversity, and were convinced that it would be to the advantage of all the firms concerned if a suitable standard gallon oil can were put into use.

So certain were Metal Box of the benefits to be derived from such a project that a production line was installed before the container had in fact been generally accepted.

With time, the tin was recognised as being so appropriate for motor oil that it was generally adopted.

There must, of course, be exceptions. There exists for instance a small but valuable export trade to countries where American competition is keen. The Americans naturally pack their oil in American gallons, and so a special tin had to be produced capable of



The standard gallon oblong tins made by Metal Box. The decoration is a prototype.

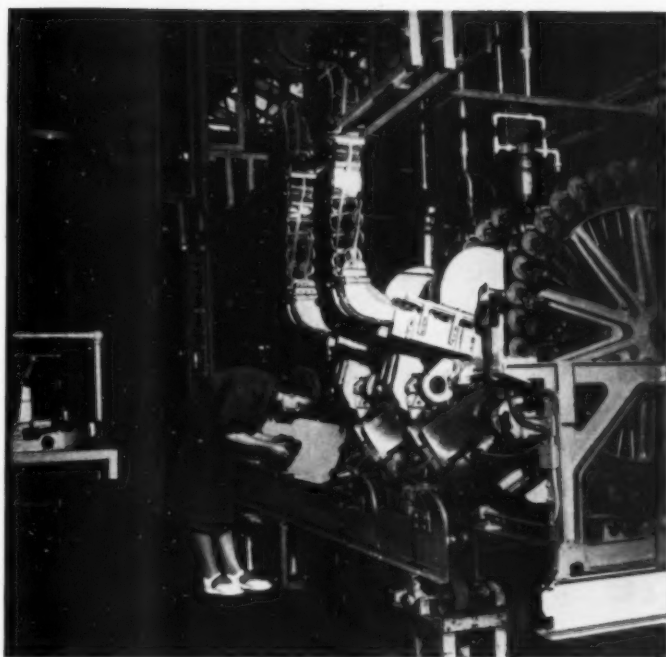


holding an American gallon. Standardization to Metal Box is not an end in itself, and here was a clear case that called for special treatment.

After the standard gallon came the standard range of measures—half gallon, quart, pint, half pint. Here again, the difference in volume between the British and American measures proved an obstacle to full standardization, though the volume demand for American pint-size cans was sufficiently large to form a standard of its own. A design was produced which allowed the same ends to be used for both measures, the variation being taken up by varying the height of the body. A nice balance had to be maintained, so that the taller version did not look thin while the smaller did not look squat.

That the problem was solved may be gauged from the experience of an American manufacturer. His product is marketed all over the world in a standard American range of cans; in many countries, the cans are made locally to the design of the firm. When it was introduced to the British market, the manufacturer asked Metal Box to quote for a can of his standard design. They produced a prototype, set it side by side with their own standard model American pint size can, and quoted comparative costs. The American manufacturer ordered the Metal Box standard. Thus to-day, his product is sold throughout the world in its own standard can—except in Britain, where the British standard prevails. A triumph of standardization in practice over standardization in theory.

The culmination of this four-phase programme can be seen in the standards book that is compiled at head office and circulated to all factories. Here the entire output of standard lines of can is summed up in five components with some two dozen basic diameters. The great bulk of Metal Box's output consist of these standard lines, and even where special shapes have to be used, further efforts are constantly



Standard open top food cans are automatically tested during manufacture.

being made to reduce the number and variety of these. Shapes and sizes of talcum powder tins, for instance, have been in recent months greatly reduced in number solely by negotiation and salesmanship.

The standards book is regarded as a guide, rather than a law. Managers of the local factories are allowed a very considerable degree of autonomy in their activities.

Each factory tends to specialize in certain types of container, though there is no hard and fast rule that it should. The degree of specialization is determined by the economics of the situation. The stamping of circular ends from a rectangular sheet necessarily involves the production of a certain amount of "shred" or scrap, which must be returned to the rolling mills for re-use. The transport of sheets for ends thus involves the transport of scrap—a wasteful procedure.

As a consequence, the production of ends has been centralized at Neath, close to the rolling mills, so as to reduce this transport to a minimum. In the manufacture of certain components, discs are cut as waste and these in turn are utilized to produce smaller components. As already mentioned, due to the shortage of tinplate, wasters have to be used. This involves the use of uneconomical sheet sizes and in order to reduce scrap to a minimum sheets are trimmed before stamping. The off-cuts so formed are then utilized for the manufacture of small caps and other components.

The Metal Box Company's work on standardization is but one of the methods it employs to conserve scarce materials. Research and development are constantly directed towards the same objective—the production of the maximum number of containers from the available supplies of raw materials.

How can a sole supplier whose main customers are government departments and nationalized undertakings maintain efficiency in face of the dangers of bureaucracy and inertia that so often come with size and security? This is the major problem facing Sir Thomas G. Spencer, newly-appointed chairman of Standard Telephones & Cables, Ltd. After forty years with the firm, Sir Thomas has his own ideas—and is putting them into practice.



## He gets efficiency without competition

By A. E. BLAKE

**S**TANDARD Telephones and Cables, Limited, of which Sir Thomas G. Spencer became chairman this year, belong to the new industrial order. They exist to supply an essentially modern need—instantaneous communication over the whole world. Their merchandise is the product of scientific discovery. They are unique, in the sense that they are one of only two organizations in the world capable of developing, manufacturing and operating the whole range of equipment needed for telecommunications. They have customers in every part of the world, a great many of them are national undertakings. Their relations with the British state are close not only because the state is their best customer in peacetime, but also because their products and the technical and scientific skills they command are vitally necessary to the nation at war.

These characteristics differen-

tiate the company from those with commodities to sell which are dominated by the market, but they are not unique. Many industries of a highly technical nature and following closely the results of up to date research are moving in the same direction, becoming increasingly dependent on both the scientist and the state, and more and more insulated against the effects of free competition, in the main based on price.

How can companies of this type maintain their efficiency or even, for that matter, their independence of the state which is their patron in peace and their master in war? What are the risks of organizations of this size becoming over-large, bureaucratic and unresponsive to new ideas? To seek answers to these questions in a study of the organization of such a company as Standard Telephones and Cables is to realize how irrelevant to industries of the

modern, scientific kind is the controversy on state control *versus* private enterprise.

The Standard company are so representative of "private enterprise" that they are still a private company; their shares are not quoted on the Stock Exchange. Their owners and management are vehement partisans of private enterprise. Yet price competition plays little part in keeping the company efficient, and their policy and methods resemble those of a national utility far more than those of private enterprise.

In separate branches of its business, Standard Telephones and Cables are, it is true, exposed to competition, but there is no other company in the British Commonwealth capable of supplying all the equipment needed for any telecommunications system on any scale. Nor is it at all likely that private capital starting from scratch will attempt the creation

of any such competitor.

Forty years ago, Colonel Sosthenes Behn, a financier with great vision, found himself the owner of an unimportant telephone company. By 1920 Col. Behn had extended his telephone interests, and created the International Telephone and Telegraph Corporation, on the model of the American Telephone and Telegraph Company. The A.T. & T. consisted of 28 operating companies using equipment supplied largely by a single manufacturing company, the Western Electric Company of America. As far back as 1883, when there were only 10,000 telephone subscribers in the whole of Britain, Western Electric had set up a small office in London. In 1897, they started manufacture at Woolwich and in 1910 the Western Electric Co., Ltd., was formed as a British company.

With his interests largely extended by a Spanish concession, Col. Behn acquired all the manufacturing companies owned by A.T. & T. outside America, and the Western Electric Company of Britain was renamed Standard Telephones and Cables, Ltd.

Two events happened in 1911 that were to have great import-

ance for the Western Electric Company, and it is safe to say that both of them went unregarded by the management. One of them was Col. Behn's acquisition of a small telephone company. The other was that a young engineer named Thomas Spencer, who had just completed his apprenticeship at the Royal Ordnance Factories, joined the staff at the Woolwich works. He made his way in the firm, and opportunity found him in the right place and with the right record when Sir Frank Gill, then Chairman, embarked on the policy of creating for Europe a "long lines" department comparable with that of A.T. & T. in America.

Instead of continuing to buy up cable companies on the Continent, it was decided to approach the biggest companies with a view to becoming their consultants. Spencer, then assistant general superintendent of the European staff, was made responsible for advising these contacts on techniques. His promotion thereafter was rapid. From works manager and chief engineer at the Woolwich factory, he was made general manager of the company and later managing director. On Sir Frank Gill's death he was appointed

#### COVER PHOTOGRAPH

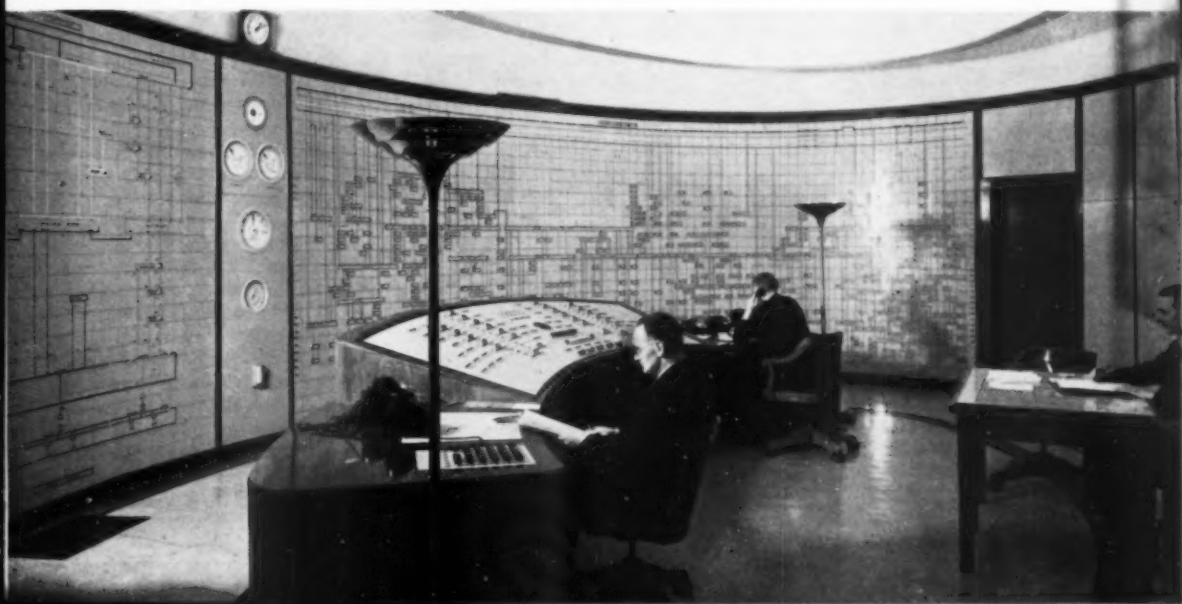
The colour photograph on the cover, specially taken by a "BUSINESS" photographer, shows the assembly of a switchboard at the new Southgate factory of Standard Telephones and Cables, Ltd.

Chairman, continuing his executive duties as managing director.

American financial control sits lightly on the shoulders of the company, and there is not a single American on the staff. The character of the company—even the style of its publicity—is solidly, stolidly British. It has always bred its own leaders and has been fortunate in having a dynasty of executives which grew up with the company and thus acquired an understanding of its problems that an outsider would find it difficult to gain. Until a few years ago, the whole board of directors as well as the rest of the management consisted of men active in the business, and it was a departure when four outside directors were appointed to broaden the board's collective outlook.

The burden of responsibility placed on the chief executive has immeasurably increased, however, with the growth of the company and the increasing technical complexity of its business. An out-

By means of this elaborate remote control system, technicians of the British Electricity Authority control the electricity supply in the Manchester area.





**A 100-kw. broadcasting transmitter at the B.B.C.'s Washford station.**



**A trunk telephone switchboard at Exchequer Street, Dublin, a part of the Dublin-Cork Coaxial system.**

sider might infer from the new management structure adopted in February of this year that Standard have reached a turning-point in their history. Hereafter, further growth may depend on their success in devolving authority from the centre. Until recently the organization was a line-and-staff "tree" consisting of eight product divisions with co-ordinating functional departments. As many firms have come to realize, this attempt to combine a direct chain of command with the benefits of specialized advisory services on such functions as budgetary control, personnel relations and research can either proliferate an inordinate number of committee meetings or place an intolerable strain on the chief executive and his deputies.

When Sir Thomas Spencer became chairman of the company, while retaining his responsibilities as managing director, the need for a change in organization became apparent, if only to relieve the pressure at the centre. Under the

line-and-staff set-up, no fewer than seventeen departmental chiefs were reporting directly to the managing director. Sir Thomas Spencer's analysis of the problem led him to the conclusion that a change was desirable also for the general efficiency of the organization further down the line.

"What we aimed to do through the reorganization just completed," he said, "was to 'take a profit' from the growth of the company. Able young men had come to maturity in the service of Standard. As chief executives, they would have the advantage of having grown up with the business."

Essentially, the change in structure was to divide the technical and production activities of the company into two groups, placing each under a general manager. The heads of the two "functional" departments, Mr. J. R. Pheazey, the works director, and Mr. A. W. Montgomery, the technical director, were each given control, as joint general managers, over works and product divisions whose

managers—nine in all—had formerly reported directly to the managing director. The functional activities formerly discharged by the new general managers were absorbed into their new departments and supplemented by three policy committees—technical, production and commercial—which have permanent secretariats but, it is intended, meetings at fairly long intervals.

The effect is that only five executives now report to the chairman and managing director—the two joint general managers, and three managers controlling respectively finance, foreign business, and personnel. In addition, the research and development laboratories, formerly a responsibility of the technical director, are wholly separated from the organizational structure.

Sir Thomas Spencer has strong views about the danger of research "getting mixed up with the works." Segregation—preferably complete geographical separation—is essential, he holds, for the



research staff in an organization which must undertake fundamental scientific research, even though it may be necessary to maintain units in the works to carry out specific developmental or "applied research" work on current problems.

The controversy between those who favour cloistral seclusion for scientists and those who insist that scientists in industry ought to work in the closest association with the factory in order to keep in touch with commercial realities is probably a matter of terminology. If "research" is defined as the investigation of specific manufacturing problems, work on substitute raw materials, the improvement of processes, etc., then the scientist no doubt works most efficiently as part of the production team. In an industry like telecommunications, on the other hand, where progress equally depends on fundamental discoveries, the scientist would be merely distracted from his programme of fundamental research if he were required to deal with a mass of problems on the borderline of technology and product development.

Building on the foundations laid for them by Alexander Graham Bell's telephone, a sequence of able leaders—J. E. Kingsbury, G. E. Pingree, H. M. Pease and Sir Frank Gill—have built up Standard Telephones and Cables Limited into a powerful company employing 20,000 people and occupying in British industry a position apparently unassailable. Yet the telecommunications industry is far from its maturity. Even its name is new. It is still unsure how far its scope extends, and into what strange paths science may yet lead it.

The pioneering stage of industries in the past has been marked by intense competition. It was always possible for an aggressive outsider to break into the field; there was always a backer for a promising idea. It was this fluidity that kept an industry alert for new scientific discoveries and ensured its technological progress.

Today the manufacture of transmission equipment for telecommuni-

cations is an industry with a peculiar relationship to the state. All over the world telephones and telegraphs tend to be run, for obvious reasons, by governments or nation-wide corporations. Similarly, radio and radar have military applications which compel governments to foster and control the industries making the equipment and plant. Government agencies are the chief buyers of nearly all telecommunications equipment. What scope does this offer for private enterprise and to what extent can competition provide a spur to efficiency?

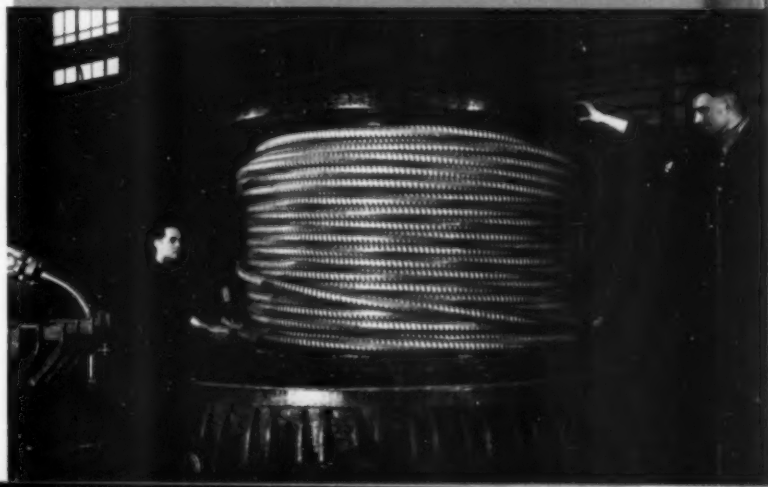
### **Controlling Costs**

As far as British Post Office contracts are concerned, the system, so far, has secured a high degree of productive efficiency and has stimulated profitable research. Treasury costings allow, it is asserted, no margin for error in estimating, and the Post Office costing officials have become, after twenty years of access to companies' figures, extremely knowledgeable about manufacturing costs. The result is a price level claimed to be fair but to permit a limited profit margin such as to encourage and make necessary strenuous efforts to improve the product and reduce the cost of production.

Nevertheless, telecommunications research undoubtedly has a collectivist trend. Joint development committees for concerted attack on specific technical problems are often established at the instigation of the Post Office and other government departments, and research projects under these schemes are commonly allocated to one or two firms considered to be best equipped to carry them out. The Post Office knows so much about the facilities for production and methods of contractors, and the manufacturing companies know so much about the user's problems, that the relationship of the buyer and seller of telecommunications equipment cannot be regulated by the free play of market factors that traditionally kept industries in economic health.

In these conditions, the onus for keeping a company efficient, enterprising and alert to new ideas is thrown on to its management and its technical staff. Severe scrutiny of prices and costs by the public corporation buyer prevents anything that could be called "featherbedding," and only by constant applied research into new raw materials, production and testing methods, and continuous development of new designs, circuits and planning of system, can such a company continuously show a successful result in its operations.

**Impregnating Standard power cable with oil.**





# BUSINESS CALLING

## News and



**Major E. BEDDINGTON BEHRENS, M.C., Ph.D.**  
Chairman, Gray's Carpets and Textiles, Ltd.

**T**HE QUESTION of the rapid and continued rise in the price of the raw commodity, whether wool, cotton, flax or rayon, and the shortage of these commodities, must be a cause of constant anxiety to all those in the textile industry. For the same physical volume, the cost of financing is enormously increased, and this may lead to many of the smaller concerns closing down or drastically curtailing their business.

These conditions may also result in manufacturing concerns getting into the habit of carrying a much larger volume of stock than would be considered prudent in normal times, or in a falling market. It is characteristic of rising markets that reasons are adduced to justify the view that present conditions are an exception, but past experience tells us that what goes up also comes down, and the sharper the rise the sharper the eventual fall.



**Sir GEORGE USHER**  
Chairman, Aberdare Cables, Ltd.

**T**HE RATE of inflow of orders has been most satisfactory as both the home and export markets have rapidly expanded. While the order book presents such a healthy aspect, there is a very different picture to put before you on the raw materials position.

As many of you will be aware, the Ministry of Supply has cut supplies of copper by 15 per cent. below the supplies of copper taken by the trade during January-June, 1950.

Export licences for supplying copper wire and strand were re-introduced in the autumn of 1950, and no export licences for this material have been issued for many months. In February, 1951, the Ministry of Supply cut the supplies of lead by 10 per cent. on the average over the whole of 1950. Insulating paper, jute, hessian and other essential raw materials are all in short supply.



**Sir ROWLAND SMITH, M.I.Mech.E.**  
Chairman, Ford Motor Co., Ltd.

**L**OOKING TO the future, we are primarily concerned with the impact of world rearmament and all that it entails upon the operations of our company. Progressively during the last nine months it has become apparent that our plans must be kept flexible enough to meet new situations as they arise. Recently, we have heard from the Chancellor of the Exchequer that some falling off in exports is inevitable among those industries, including our own, which may be most concerned with defence. We have now been notified of seriously reduced allocations of sheet steel, compared with last year. Other important supplies have also been affected. Notwithstanding reduction in sheet steel supplies, we are told that export must be maintained to the fullest possible extent.

## views of business men

### **Mr. GEORGE F. EARLE**

**Chairman, The Associated Portland Cement Manufacturers, Ltd.**

**I**T HAS been practically a tradition that businessmen take no part in politics, and a very good tradition it was—for when it was formed, politicians did not interfere with business. They confined their work to producing conditions under which business could prosper, while at the same time, by wise legislation, improving the lot of the working man.

This is no longer the case. Many businesses, including our own, are controlled by the Government, and though we do receive help from our ministry, especially in dealing with problems which arise owing to the action of other Government departments, one cannot deny that at times decisions are made which affect business, for political rather than business reasons. Regrettable though it may be, this means that no business man can avoid being mixed up with politics to some extent.



### **Mr. G. N. VANSITTART**

**Chairman, Vauxhall Motors, Ltd.**

**W**E HAVE repeatedly drawn attention to the dangers of rising costs in manufacture, and to the risk of pricing ourselves out of export markets. This danger is now with us as an ever blackening cloud. The costs of urgent armaments are reflected not only in their current expenditures, but in the inflationary movements which they set in motion. For to reduce cost levels, once they have climbed, is a long, slow job, unless economic conditions (including buyers' refusals) cause the whole structure to collapse, with the catastrophic results which all can remember in our own lifetime. We must, therefore, continue to struggle wherever we may to keep costs and selling prices down, as our industry has tried to do, in spite of the somewhat fantastic prices which buyers might be tempted to give (and are giving) for the motor industry's severely rationed products.



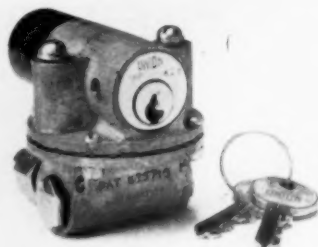
### **Mr. EDWARD A. O'NEAL, jr.**

**Chairman and Managing Director, Monsanto Chemicals, Ltd.**

**C**RUCIAL CHEMICAL raw material shortages began to develop during 1950, and are expected to become more acute during 1951. The major shortage is of sulphur from the United States, which appears likely to be of long duration. It is estimated that conversion to the use of pyrites and anhydrite to overcome the difficulty in the United Kingdom may take up to five years. Capacity for purifying benzol for chemical use is only equal to present requirements, and we are working with other users and producers to provide both short and long term expansions to cover the needs of the industry. Planned expansion of phthalic anhydride manufacture will require the country's full production of crude naphthalene, and additional refining capacity must be provided.



# Look Out for WHAT'S NEW



## VEHICLE PROTECTION

**A** TWIST of a key in this-fool-proof vehicle locking device turns off the petrol or diesel oil supply and puts the magneto or coil out of action—the vehicle is then safely guarded and cannot be moved under its own power. Easily fitted to all models, the *Petromag* lock is supplied with two individual keys, unions and adaptors for fitting.



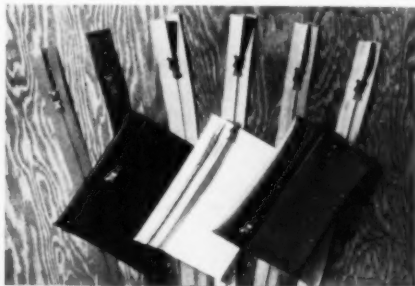
## CALENDAR CLOCK

**L**EAP-YEAR presents no difficulty to the electric *Calendarclock* which not only records the time but also the hour, month, date and day of the week, and is self-adjusting to even the extra-long February. A Dutch invention, the versatile time-piece is obtainable with month and day indications in any language required. Dial diameter of this particular model is between nine and 11 inches.



## LEAKAGE LIGHT

**U**NDER the powerful ultra-violet beam of this fluorescent lamp, dangerous oil leaks from electrical and other equipment are quickly detected by their vivid colour reaction to the "black light." This beam is emitted from the 2-lb. hand burner and it causes almost every type of mineral and vegetable oil to fluoresce with distinct, revealing colours in darkness or diffused light.



## ANY LENGTH FASTENER

**C**UT from a continuous strip of pliable plastic material, these attractive new type slide fasteners can be quickly adapted to any length or chosen to match any normal colour. They are simply composed of two plastic "tapes" which lock firmly together when compressed by the smooth-running slide. Watertight and airtight, the fasteners are obtainable in continuous rolled lengths up to 40,000 feet.

# Orders Invoiced in 24 Hours with Multi-Purpose Form

By BRIAN CUMMINGS

**In their wholesale bakery business, J. Lyons & Co. made one form serve as order, packing/delivery note, and invoice. This saved printing, paper and labour costs and if necessary enabled documentation to be completed within 24 hours.**



**Microfilm copies of the order/invoice can be examined with a reader.**

**T**O the man in the street, the name of J. Lyons and Company generally signifies "tea shop" or "Corner House." Then he thinks of Swiss rolls, Madeira cakes, and all the other famous commodities that are sold throughout the country by bakers, confectioners and others.

Lyons' wholesale business in cakes, pastries and other bakery products is very large and they receive thousands of orders a day. These orders have to be executed quickly, for food products are not ordered much in advance of actual sale.

When this side of the business was started before the last war, it was run in two sections: road delivery to customers within 25 to 30 miles of road distribution areas; and, where there was no road distribution area, despatch of goods by rail to all parts of the United Kingdom.

The method of handling this side of Lyons' activities started with the sales representative calling on customers to obtain orders for cakes, etc. If necessary these orders could be executed the next day. The customer's name and address was written on the order form, which was sent to Cadby Hall. Here it was scrutinized to make sure that all the items were

available; then it was transcribed on to five-part typewritten invoices.

These invoices had to be checked against the original documents to make sure that nothing had been left out. Altogether, the work connected with these forms was quite an expensive item in clerical labour costs and the business grew so rapidly that it became a physical impossibility to accommodate all the typists and clerks needed to deal with the work.

An important feature of the problem was that the company could not spread the load from day to day. Monday and Tuesday might be quiet, but Wednesday and Thursday were always very busy. A new method of invoicing was sought and found which was quicker and more accurate than the old one.

In pre-war days, all rail customers were on credit terms. Although the representatives collected money, it was not necessarily related to the order in hand. The invoicing department was not concerned with the handling of cash, but devoted all its energy to handling order forms.

A new form was devised which served as order form, packing/delivery note and invoice. This was pre-printed with lists of goods

available, and with columns for quantity required, price and cash. It was used as follows:

The representatives called on the dealers in accordance with pre-determined journeys and wrote on the new type of form the dealer's name and address, the date on which delivery was required, and the quantity required of each item ordered. These forms were sent daily to Cadby Hall, where they were scrutinized for date of delivery, availability of goods, and so on.

After scrutiny they were passed in batches to clerks, who worked out on hand-operated calculators the value of the order and the total was written on the reverse side of the form in pencil. The orders were then passed to another group of clerks who wrote in the cash columns the value of each line ordered. The total value of the order was calculated again and checked with the original figure written on the back of the form. If the two figures did not agree, the girl concerned in the second group went over her calculations a second time and tried to find the mistake. If she failed, the docu-



ment was put on one side for re-checking by yet another clerk.

Having been extended and checked, the order forms were passed to a third group of girls whose job it was to work out, with the aid of small decimal calculators, the size in cubic inches of the order. From this figure they were able to determine the number and size of cartons needed to pack the order. This served the twofold purpose of indicating how many labels had to be completed and obviating any guesswork by packers as to the carton requirements.

Once these calculations were finished, the order forms were sorted into travellers' journey numbers, after which they were passed to the addressing machine installation. This installation included addressing plates for all the customers, the plates being kept in alphabetical and journey order.

On receipt of the order, the addressing machine operator selected the appropriate plate and used it to make impressions in two perforated spaces at the foot of the order form. One of these served as a ledger posting medium and the other as a reference stub in case of query by the customer. At the same time she addressed the number of labels required, according to the figure indicated by the packing calculation.

The addressing machine installation also provided a very effective method of stopping orders which for one reason or another

were not allowed to go forward. On receipt of the appropriate information, the "live" plate was removed and replaced with a dummy bearing only the name and address of the customer. Thus when the operator came across such a plate she knew that the order had to be referred to her supervisor.

The next stage was to pass the order forms to teams of girls whose primary job was to ensure that the forms had been correctly addressed. After this the forms were put through an accounting machine which registered the date, order number, ledger number and net amount to pay on the body of the form and also on a detachable portion at the bottom, which in due course became the ledger posting medium for the accounts department.

### **Order Becomes Invoice**

The order form had now become an invoice and it had to be checked to ensure that the value of the order, as originally calculated, had been correctly printed by the accounting machine. When this was completed, the ledger posting stub was torn off and sorted into ledger order.

By now the form had passed through nearly all stages of its active existence, but as the original document had to go to the packing department for eventual return to the customer with the goods, it was necessary to have a copy for filing at Cadby Hall.



**Microfilm saved filing space.**

The solution to this problem was to put all the documents on to microfilm. The microfilm copies were produced at the rate of 1,000 to 1,200 an hour, after which they were filed in numerical and date order. In a space about 6ft. by 8ft., Lyons kept microfilm copies of hundreds of thousands of orders—that is to say, all those received in a period of about six months.

After the packing had been completed, the checkers in the packing department entered the relevant label numbers on the reference stubs; also their key numbers so that orders could be traced in case of query. In the office, the final operation of the day was to obtain the total value of orders registered by clearing the accounting machine and listing the ledger stubs, the two totals having to agree before the stubs were passed to the accounts department for posting to customers' accounts.

Owing to shortage of materials and alterations in trading conditions, it has not been possible to resume the pre-war system. For the time being, the war-time practice of selling standard quantities and combinations of goods has to continue. This simplifies the work of handling orders-cum-invoices to such an extent that only part of the original system is kept in use. Nevertheless Lyons hope to return to the method described as soon as conditions enable them to do so.

**Twelve hundred copies an hour.**

**BUSINESS**





# "...we need Emidictas"

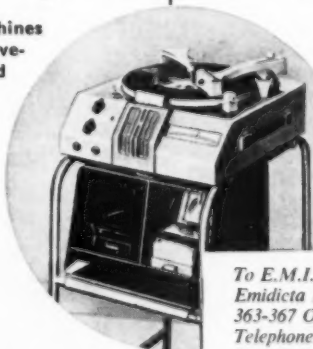


The Electronic Dictation machines which outdate all past achievements in the field of recorded dictation.

With the Emidicta, you need never be held up on 'dictation'.

In the office it ensures a smooth flow of recorded dictation to the 'pool'—and the work comes to the Typists, who freed from calls for dictation can devote their whole time to their real job—typing! The Emidicta makes everybody's job easier—gives greater efficiency, increased output, less strain.

Let us prove this by demonstrating the Emidicta to you in your own offices.



The EMIDICTA is a product of the E.M.I. Group (His Master's Voice, Marconiphone, Columbia, etc.), past masters in recording and sound reproduction.

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Telephone: Mayfair 8597, Grosvenor 7127/8.  
Please send descriptive brochure.  
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Contrast in design. This demonstrator of the well known Sumlock calculator looks doubtful about the capabilities of the 3,000 year old Chinese abacus which was displayed in the historical section of the exhibition.



A general view of the centre aisle of the exhibition showing some of the attractive stands.

## At the World's Biggest Office Equipment Exhibition

Everything from a box of staples to punched card accounting machines were on display from June 6 to 16 at the Business Efficiency Exhibition. Largest of its kind in the world, it was also one of the "best dressed" exhibitions ever seen at Olympia.



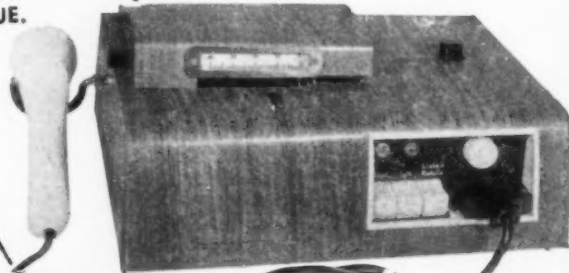
The Latest  
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Electronic Disc  
Recorders



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MACHINE OF  
ADVANCED  
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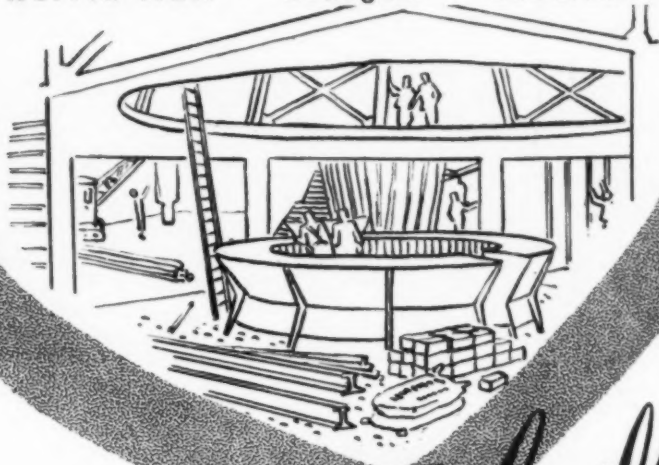
3 VERE STREET, OXFORD STREET, LONDON, W.1. Telephone: MAYfair 6185/6.



FESTIVAL OF BRITAIN

## EXHIBITION OF INDUSTRIAL POWER

Kelvin Hall · Glasgow · Scotland



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Another view of the exhibition. Exhibits covered an area of 175,000 square ft. The historical section, film shows and the "News Chronicle" shorthand, typing and efficiency competitions were additional attractions.

★

★  
A corner of the National Cash Register Company's stand. This firm's new Class 31 accounting machine was a centre of interest during the exhibition.



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Max. sheet 10" x 15"

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Above, being demonstrated in this photograph is Block & Anderson's Planflex charting system, which was displayed for the first time.

★

Above left, something new to British eyes was Remington Rand's Robot Kardex unit. Kardex trays are stored in the machine and presented to the operator by simply pressing a button.

★



Left, this IBM calculating punch, displayed on the International Time Recording Company's stand, will add, subtract and divide. This model is to be made at IBM's new Scottish plant, now under construction.

**ADD, SUBTRACT,  
MULTIPLY, DIVIDE,**

*WITH THE*

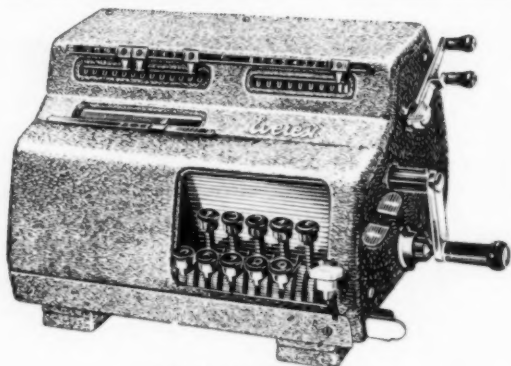
**Ewerest**  
CALCULATOR

- SILENT SPEEDY FOOL-PROOF
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- 13 COLUMN CAPACITY
- PRICE—£97. 10. 0.

Automatic locking mechanism obviates risk of faulty operations, so that an unskilled operator can perform intricate calculations in a matter of seconds. This machine will pay for itself over and over again,

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THE NEW 1950 MODEL

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with the Bradma system



This Bradma operator  
does 2 DAYS WORK



Applied to Wages work the Bradma system will handle the printing of all repetitive detail on pay slips, envelopes, and time cards at the rate of 1,000 to 3,000 per hour according to the machine used—and without risk of error.

The system can be introduced without disorganising your existing methods in any way.

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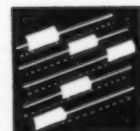
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JULY, 1951



FITS  
INTO  
EXISTING  
CABINETS



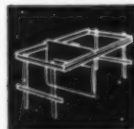
Indexing is simple  
Title inserts supplied perforated



Six positions  
Slotted for quick  
interchanging



Self-adjusting for  
few or many  
papers



Strong metal  
frames for  
suspending files

"Staggered" filing means instant visibility. You see the file you want without searching. Each tab stands clear in its own staggered position.

Shannobic files have adjustable tabs in FIVE or SIX positions and each file hangs separately, by metal hangers on a metal frame—free from contact with the bottom of the drawer; thus you have speed, less wear and tear and neater filing cabinets.

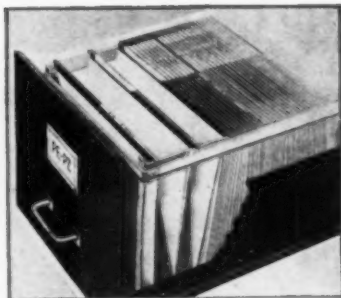
Each file is self-adjusting to any reasonable bulk of papers with double strength reinforcements for durability. Perforated labels make typing easy. Transparent tabs mean clear visibility and coloured signals flash warnings of urgent action, follow ups, etc.

You can install Shannobic in your existing cabinets—the frames fit all standard foolscap or quarto cabinets. Shannobic files are universally used for general correspondence, invoices, etc., etc., filed alphabetically, numerically, or by any other method.

Write now for full details, just jot "Shannobic" on your letter heading and full information will be sent by return.

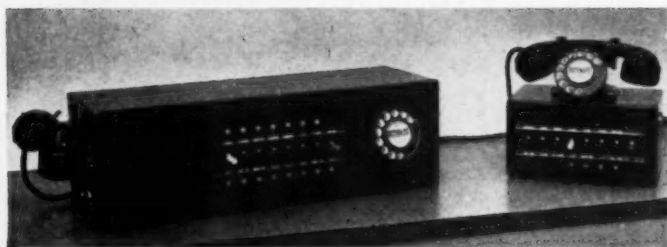
**Shannon Systems**  
FIRST IN FILING

The Shannon Limited,  
95 Shannon Corner, New Malden, Surrey



On page 116 of our June issue this photograph of the Merlin filing system manufactured by The Trade Loose Leaf Co. Ltd., was inadvertently captioned as Remington Rand's Speedac equipment. To both these firms we tender our apologies.

Above left, a newcomer in dictating machines was the Dimafon machine, marketed by Royal Typewriters.



Left, the Dictomatic master station and executive substation—a new system—shown for the first time by Dictograph Telephones Ltd.

*statements out quicker.  
YOUR money in sooner!*

—that's logic and possible with the Twinlock Ledger Posting Systems. Statement, Ledger and Day Book records are produced simultaneously and the end of the month statements are ready for immediate mailing. May we send details?

Aligning Statement, Ledger and Day Book Records for posting.

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## Finindex PUNCHED CARD SYSTEM

**FINDEX** is a unique method of selecting records by cross classification.

**FINDEX** selects the cards, quickly and accurately, presenting **ANY GROUP** on demand without disturbing the filing order of the cards.

**FINDEX** can be handled as freely as an ordinary card index.

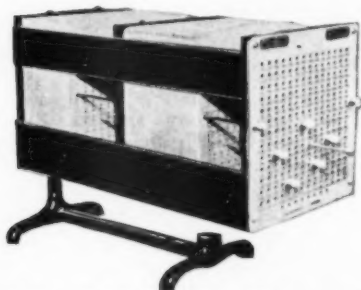
**FINDEX** provides for many kinds of sub-divisions, and the number of classifications is almost unlimited, and eliminates the need to inspect every card in the index—a monotonous and fatiguing job.

**FINDEX** is **NOT** a ready-made system—every installation is arranged specially to fit the needs of its users.

Wherever cross indexing is necessary, or wherever cards must be selected in groups, **FINDEX HAS NO EQUAL!**

If **FINDEX** was the most expensive method of keeping records ever devised it would still justify its cost and prove itself to be the most economical because of its unusual ability to produce facts on demand.

You are invited to investigate—without obligation. Our experience is at your service.



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- 3 Absolute accuracy automatically assured.
- 4 Prints face up—complete visibility.
- 5 Addresses envelopes, statements, bills, postcards wrappers, labels, etc.
- 6 Can be made to repeat, skip, duplicate or triplicate any desired address at will.
- 7 Models to cover most known requirements.
- 8 Complete control of all operations.
- 9 Forms a Card Index in addition to an Addressing or Listing Service.
- 10 Indexograph Address Units will last as long as you need them.
- 11 Over 100,000 users throughout the world.
- 12 Hand, Foot or Electric Drive Models available.
- 13 3,000 addresses per hour.
- 14 Automatic Stencil Feed.
- 15 Sheet-feed attachment for automatically listing names, numbers, or other data.
- 16 Automatic Selector for selecting and addressing any given name classifications.



## Addressall MACHINE COMPANY

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# It's Hands off Lifting and Carrying in this Plant

By ROBERT SPARK

At the Alperton Bottling Company's plant at Ealing, a conveyor system and an ingenious layout almost entirely eliminate manual lifting and carrying. The plant is used for bottling Guinness and has a maximum capacity of 1,300,000 bottles a day. Crates are never carried manually more than 10ft. and no hand trucks are used. Conveyor lines are remotely controlled from a "signal box" and automatic devices save time and eliminate non-productive labour.



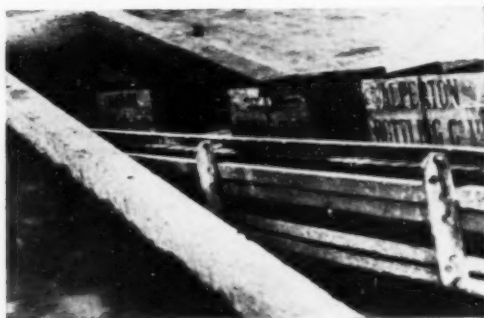
## 1 Movable track feeds trucks

Left: Mechanical handling begins at the loading bank. Full crates of bottles run on the powered conveyor alongside the wall. Roller track in the foreground is movable so that the vans can be fed with crates irrespective of their position alongside the loading bank.



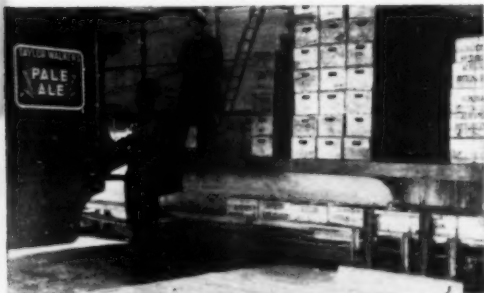
## 2 Conveyor avoids manhandling

Right: Besides bottling and distributing Guinness, the Alperton Bottling Co. also act as distributors for other brands of beer. These "foreign" beers are brought in by lorries and are off-loaded on to a slat conveyor. This carries the crates down beneath the loading bank to the foreign beer stores.



## 3 Empties go underground

Left: Trucks arriving with crates of empty bottles are backed up to within two or three feet of the loading platform. Crates are off-loaded on to a conveyor which can be seen beneath the lip of the bank. This system avoids confusion with full and empty crates, eliminates congestion on the loading banks and saves manhandling.







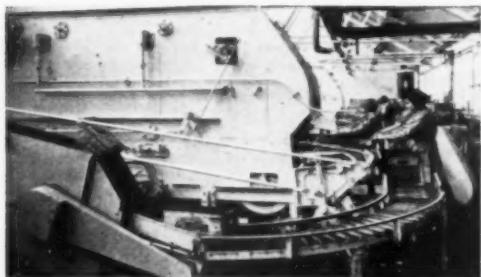
#### 5 Remote control of conveyors

Below: Inside this control room, one operator can stop and start the conveyor lines and move guide bars which divert crates to "sidings," so that all cleaning and filling units are kept at maximum production. This remote control system avoids stoppages, manual handling and labour wastage.



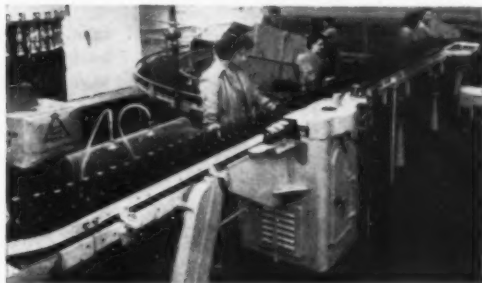
#### 6 Bottles washed, crates cleaned

Below: Crates of empty bottles are diverted to gravity conveyors feeding washing machines. Girls transfer the bottles to the washing machine and the empty crates run down the track and into an ingenious machine which inverts them (emptying out rubbish, broken glass, bottle tops, etc.) and returns them right away up to the loading lines to be refilled.



#### 4 Store without storemen

Left: Empties go from the unloading point to the empty case store. When required for cleaning and filling, crates are fed on to the controlled conveyor tracks. Half-pint and pint bottle crates are automatically selected by the conveyor by means of an angled bar.



#### 7 Filling, capping, labelling, etc

Above: Washed, cleaned and sterilized bottles go from the washing machine to an automatic filler, after which they are capped or stoppered. A narrow slat conveyor takes them under the plastic hood in the foreground where air sprays blow off surplus moisture. They are then automatically labelled and go through a drying tunnel to the end of the line where operatives load them into the empty crates.



#### 8 Automatic crate control

Above: One of the automatic "signalmen." Where two tracks converge there are two metal arms. As a line of moving crates pushes an arm to one side it operates a cam, keeping the other arm rigid and holding the crates on the other track. This avoids jamming and the necessity for manual control. Crates in the picture are on their way to the loading bank from the bottling department.

# How Research can Help the Smaller Firm

By HAMISH ROBERTSON

**M**OST businessmen to-day are convinced that research could help them—if they could afford it. For the smaller firm, however, the equipment and staffing of a research department, however desirable in theory, is economically impracticable. Yet it is the smaller firm which, above all, can benefit from research.

To meet this *impasse*, two developments have taken place in recent years. One is co-operative research through a research association such as the Printing and Allied Trades Research Association, described in the November, 1949, issue of *BUSINESS*. The other is the independent research organization, which will undertake the solution of specific technical problems on a consultancy basis.

The grandfather of such independent research organizations is the now world-famous Battelle Memorial Institute in the United

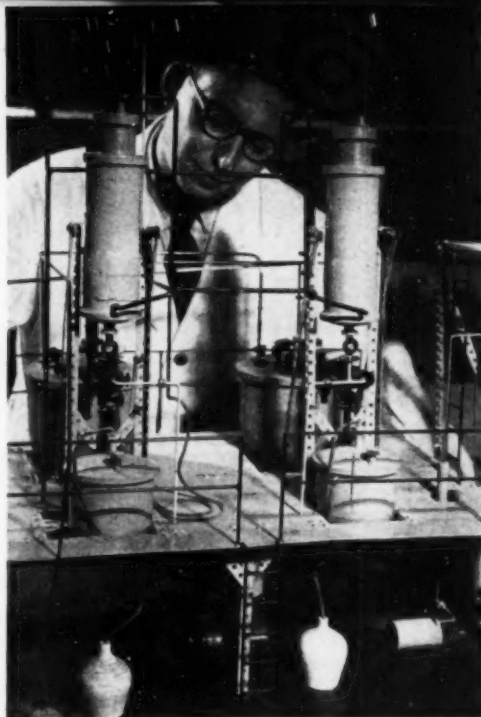
States. Research work, especially for the smaller firm, is an expensive business. One solution for top management is the independent research organization. This article describes how the services of a research institute were used to investigate and develop new products.

States. Similar institutes, on a more modest scale, are now doing good work in this country.

To show how such an organization works, the case history may be quoted of a firm faced, like many others, with a post-war reconversion problem. This was solved by the method of co-operative research—co-operative, that is to say, in the sense that it combined the work of analytical, physical and organic chemists, mechanical and chemical engineers, draughtsmen and information services. Since the value of industrial consultation work rests largely upon the professional confidence in which it is undertaken, the firm must be nameless and the products which were developed have been slightly changed.

Shortly after the war, the research institute concerned was approached by a firm that had been making materials for the Services. The factory was well equipped with mixing, filling and sealing machines of various types, but the final stages of the service products had involved a great deal of hand

Using a Hounsfield tensometer at the Soudes Place Research Institute.



Scale model of a chlorination plant designed for a client.

assembly, for which local female labour was used. The firm was situated in an industrial area which offered good employment to men returning from the Forces, and a sudden and serious reduction in the number of married female workers was experienced. The problem was therefore to find a line of products entailing less hand work and catering for the rapidly reviving demand for consumer goods. The choice finally rested on a range of household materials to be sold through ironmongers, such as polishes, adhesives and packaged ready-mixed cements.

Although the broad economic picture of production and distribution was known to the clients, there were many gaps to be filled owing to their ignorance of manufacturing costs in this field. The institute's first action, therefore, was to examine the composition of a large number of similar products. This was linked with a detailed investigation of the prices and availability of the necessary raw materials, which provided the

**BUSINESS**



basis for a rough estimate of production costs. A market survey, based on a comparison of the retail prices and consumer demand for competing products in the chosen range, was undertaken to gauge optimum scales of production and general commercial possibilities. As a result, four products out of the original list were chosen. These were a floor polish, a wall patching compound, a plastic wood and a synthetic resin adhesive.

In each case, the objective was a new or improved product rather than mere duplication of an existing one. Numerous waxes, water-proofing agents, binders and synthetic resins were tested in the laboratory, and every experimental mix was put on trial for stability and shelf-life through a wide range of temperature and humidity. There were also practical tests for ease of application and handling.

Two of the products presented no packaging problems, but it was felt that there was room for improvement in the case of the floor polish and the adhesive. The floor polish was to be packed in a large container for use in hospitals, schools and the like, and it was found that after half the contents had been used it was difficult to reach the rest without soiling the sleeve of the user. The adhesive tended to leave a ring of glue round the nozzle of the tube which dried out and made the closure immovable. The two problems were the reverse of each other: to keep the contents near the mouth of one container, and to cause them to contract away from it in the other.

Prototype containers were made in the Institute's workshops which combined an ingenious solution to these problems with a novel and attractive pack. The floor polish canister was provided with a sliding base which could be pushed up inside the walls of the tin as the contents were removed from the top. For the adhesive, a flexible plastic tube was devised which could be rolled up in use in the normal way, but retained

sufficient resiliency after squeezing to withdraw the remainder of the contents from the nozzle itself.

After the prototype containers had successfully passed a further series of tests in the conditioning cabinets, the engineering department prepared working drawings for the necessary press tools. The project concluded with a carefully planned re-arrangement of the clients' plant layout to enable the mixing of the constituents—necessarily batch processes owing to the use of volatile solvents—to be geared in smoothly with continuous filling, sealing and labelling.

This example illustrates only one of the many types of production problems solved by this Institute—the Sondes Place Research Institute. Plastics and adhesives, ceramics and refractories, plywood and concrete, cast iron and non-ferrous alloys, have all been the subjects of research and development.



A 150-ton concrete testing machine used at the Institute.

## Survey of Modern INDUSTRIAL EQUIPMENT

This month the Survey of Modern Industrial Equipment is devoted to a selection of products of interest to executives, and which were displayed at the Gauge and Tool Exhibition in London. At this exhibition many tools and instruments of new or improved design were featured, testifying to the progressive outlook of this specialized industry.

### Checking Tapped Holes

THE routine inspection of internal threads in nuts, etc., with hand gauges is a time consuming operation. Automatic inspection, on the other hand, causes excessive wear on steel gauges resulting in inaccuracies and high replacement costs. The *Autogage* is a compressed-air driven gauge which is claimed to overcome both these problems. The "go" and "no go" threads are machined from sintered tungsten carbide and have a working life

considerably in excess of ordinary tool steel.

A double band rubber drive instantly reverses the direction of rotation—thus unscrewing the thread—when slight back pressure is applied to the driving shaft. Deformities of the thread under test slip the cone clutch, removing the drive from the test piece.

The *Autogage* operates off an 80-100 lb per sq. in. air pressure; consumption is 6-7 cu. ft. per minute. The gauge has an anodized aluminium body and the tungsten carbide test pieces can

be supplied to fit any standard or special thread.

—(Enquiry Ref. No. J 51/40.)



The Autogage for checking tapped holes.

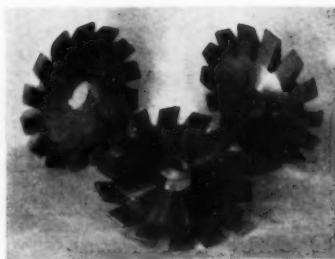
#### Cast Machine Tools

A CASTING process for producing blanks of milling cutters and other machine tools has now been perfected. It is claimed that the process enables tools of improved design to be manufactured by avoiding the restrictions imposed by normal machining methods.

The hole and keyway is soft-

machined into each cutter. After hardening, grinding is the only other process necessary. A chromium - vanadium - tungsten alloy steel is used in the casting of the blanks. Some of the advantages claimed for these cutters are: higher feeding speeds and greater depth of cut, longer life with less power consumption, and a cutting rate at least as high as with a standard machined tool.

—(Enquiry Ref. No. J.51/43.)



Cast form relieved cutters.

#### Feeding Strip and Sheet Metal

SIMPLICITY of design and operation is the outstanding feature of the *Productafeed*, a new system for feeding strips of metal and other material into pressing and stamping machines. Strip is clamped between two "book opening" feed slides; the front one grips the strip and moves it forward any distance up to five inches. Hydraulic pressure is applied to the strip through pads of felt which prevent the material being marked or damaged.

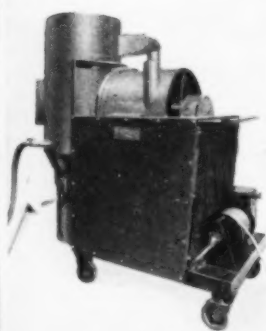
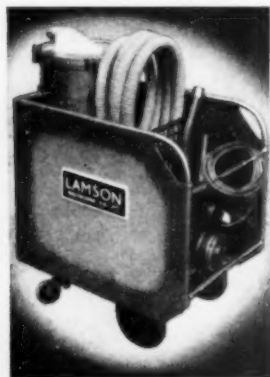
The impellor supplying the hydraulic drive is fixed on the end of any revolving shaft of the parent machine (e.g. the crank-shaft of a power press) and impulses are therefore perfectly synchronized. The only connections between the impellor and the feed guides are a pair of flexible pipes for the hydraulic liquid, so that there are no restrictions on where the two parts can be mounted. Turning a knob on the impellor varies its stroke and therefore the "throw" of the feed guides.

Successful feeding of short



## PORTABLE VACUUM CLEANERS

# For Every Industrial Need



For the quick and efficient cleansing of buildings and vehicles there is no better machine than the Lamson "Major" shown on the left. Completely self-contained, it is equipped with three-stage turbine and special bag agitating device. For those requiring a very powerful Vacuum Cleaner, there is the 2 Operator unit shown on the right.

Write for full particulars of these and other models to Dept. "D".

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need  
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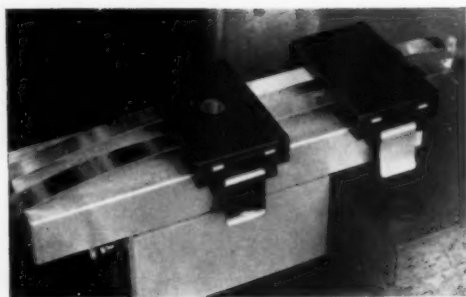
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51





The mechanism of the Productafeed—a new system for feeding strips of metal into pressing and stamping machines.

lengths of material or several narrow strips side by side is a simple matter. The working parts are enclosed to exclude dirt.

—(Enquiry Ref. No. J.51/41.)

#### Speedy Glass Drilling

**A** NEW impregnated diamond compound enables the drilling and cutting of glass, porcelain, stone and similar substances to be greatly speeded up. The *Intra-bonded* material is sintered in various shapes and the pieces inserted in drill shanks or round the circumference of a circular saw blade. Over 2,000 clean holes in

$\frac{1}{4}$  in. glass can be bored with a single drill. The smaller sizes of drill are fitted with a core ejector. Average time per hole is between 12 and 15 seconds and drills are available in any size down to  $\frac{3}{16}$  in.

—(Enquiry Ref. No. J.51/50.)

#### New Type Collet

**E**XTREME accuracy, powerful positive grip, and increased capacity are some of the claims made for the *Trugrip* new-type collet chuck. The draw tube and sleeve of the normal collet have been eliminated thus giving the

*Trugrip* greater capacity. Concentric error is stated to be less than a thousandth per inch.

The chuck is at present available in two sizes of five and seven inch diameters with capacities of one or two inches. Other sizes, with stepped and alternative types of sleeve, will be available shortly. An alloy cast-iron body and hardened ground sleeves should ensure a long working life for the chuck.

—(Enquiry Ref. No. J.51/42.)



The new Trugrip collet chuck.



## PROVIDES AN ANSWER TO EVERY HANDLING PROBLEM!



**B.E.V. TYPE E.116 1-TON ELEVATING PLATFORM TRUCK** — A truck of similar function to the "LEADER" but is operated from the Driver's Platform.

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**"Hi,  
there...  
let me  
out of  
here!"**

*says*

**JACK SCRAP**



How many thousands of tons of iron and steel scrap are there locked up in factories and yards all over the country? Every ton of it reclaimed and sent to the steel furnaces may mean an extra ton of new steel for industry and defence.

The nation can't afford to waste this essential raw material. How much can you find? Round it up—send it in.

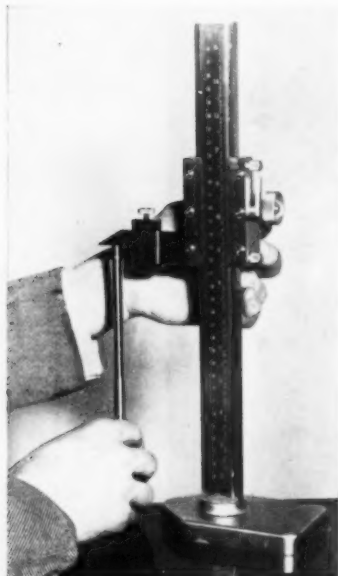
Scrap Merchants everywhere will gladly help with dismantling and collection.

**Speed the  
SCRAP  
Speed  
the Steel**

Issued for the **STEEL SCRAP DRIVE** by the  
British Iron and Steel Federation, Steel House, Tothill Street, London, S.W.1

### Flush Scale Height Gauge

**E**RRORS due to "parallax" distortion can creep into measurements even when they are



The 12in. flush-scale height gauge.

taken with accurately graduated instruments. A new height gauge removes this danger by flush mounting the vernier scales. Models are available graduated up to either 12 or 24 inches. A heavy, plated stand ensures that the instrument is both rigid and stable.

—(Enquiry Ref. No. J.51/45.)

### New Drill Chuck

**T**HE new method of construction used in the *Cardinal Mark II* drill chuck gives accurate concentric running, and strength and durability with lightness. The chuck disassembles into eight separate parts each accurately machined so that it can be replaced immediately from stock. The jaws are bayonet slotted into the body and are locked with a special key.

The chucks are already available in a wide range of sizes and further models will be added shortly. Arbors can be supplied to correspond with the chucks.

—(Enquiry Ref. No. J.51/48.)

### Ratchet Spanners

**R**ATCHET spanners in the *Leytool* range are now being manufactured with a trigger for reversing the direction of ratcheting. Spanners are available to fit 150 nut sizes in any of the standard thread gauges.

Plug sets can be supplied for use with socket-headed screws: an extension piece facilitates dealing with screw heads in awkward positions. The spanners are made from hardened chrome steel with a negradized finish.

—(Enquiry Ref. No. J.51/49.)

### Internal Micrometer

**A** HANDSOME three-point internal micrometer, the *Imicro*, is now being manufactured in this country. Originally of Swiss design the instrument is available in a wide range of sizes graduated in either inches or metres. The working parts—a threaded cone which bears on three threaded feeler bolts—are all machined with the greatest accuracy. The micrometers are supplied

## THIS WORKSHOP CHANGED TO POTTERTON RADIANT HEATING

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- BENEFIT 4.** No time is lost in the mornings waiting for the building to "warm up": adequate heat is supplied within a few minutes.

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**STOREROOMS, DRAUGHTY CORRIDORS ETC.**



## POTTERTON Gas Fired RADIANT PANELS

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Write for full details to:

Thomas De La Rue & Co. Ltd., (Potterton Gas Division) Imperial House, 84/86 Regent St., London, W.1. Northern Area: 4 Albert St., Manchester 2. Midlands Area: Portobello Works, Warwick

*Lubrication on your mind?*

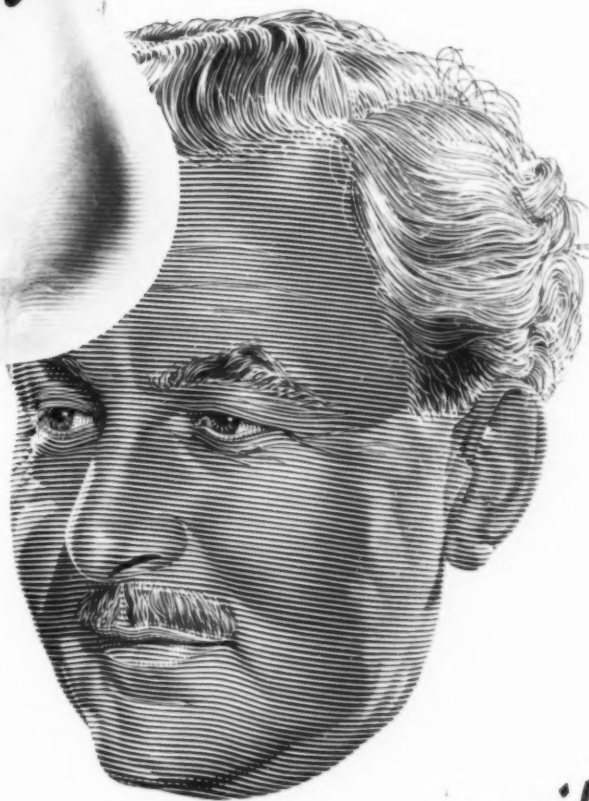
I'm a doctor, not a motor engineer. On lubrication I have to judge by what people I trust tell me and by results.

I first tried Energol because the maker of my car recommends it, and my garage owner uses it himself. With Price's and Anglo-Iranian behind it I thought it must be pretty good. Well, I've had thousands of miles easy running and no trouble starting winter or summer.

So I feel safe in saying myself, you should use

**ENERGOL, THE OILIEST OIL**

*says the doctor*



*Use* **ENERGOL** *motor oil*



Recommended by leading British Motor Car Manufacturers

**PRICE'S LUBRICANTS LIMITED**



**The Imicro three-point internal micrometer.**

either singly or in sets complete with control rings in a wooden case. Extension rods up to 40 ins. in length are available for checking extra deep bores.

A further application of the instrument is for inspecting internal threads. Special feeler bolts are supplied with faces machined to fit a variety of metric and other standard threads. This method enables the threads to be checked

while they are actually being cut—impossible with the normal type of plug gauge.

—(Enquiry Ref. No. J.51/46.)

#### **Precision Bench Centre**

**M**ACHINED from tool steel within limits of .0001 in., a new precision bench centre incorporates its own surface table. The centre will take work up to 9 in. in length and 6 in. in diameter. The clamping screws are extremely simple and efficient and the instrument should prove most useful in workshops where it is inconvenient to carry work to a special department for inspection.

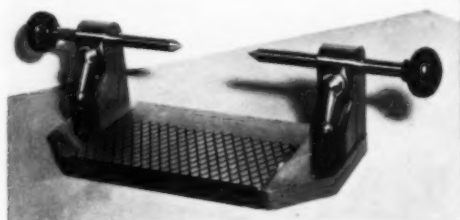
—(Enquiry Ref. No. J.51/47.)

#### **Gauging Rolled Sheet**

**E**XACT control of the thickness of metal sheet and strip as it is rolled is now possible with the *Flying Micrometer*. The metal (or other hard material), passes between a pair of precision rollers fixed at the end of two arms, one of which can move. The gap between the rollers is preset with a micrometer control and plus or minus variations are registered on the dial of a meter.

The whole of the measuring head is counterpoise spring loaded and slides along a heavy steel base-plate.

—(Enquiry Ref. No. J.51/44.)



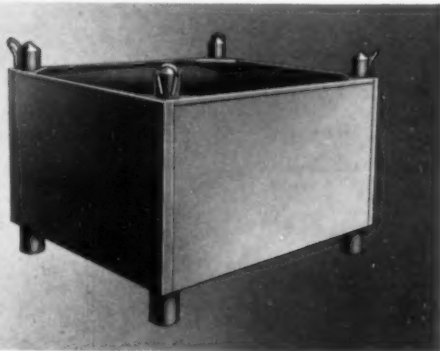
**The new precision bench centre which is described above.**

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JULY, 1951

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Satisfy yourself and your watchman by installing this modern watchman's control system embodying the following points:

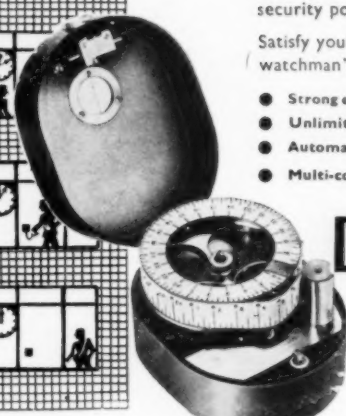
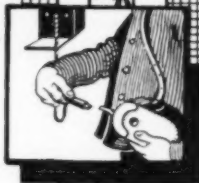
- Strong eight-day movement
- Unlimited stations
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- Multi-colour recordings
- Records can remain in the clock at week-ends
- Special record book to maximise effectiveness of control
- Foolproof and reliable

# BLICK

## WATCHMAN'S CLOCK

Details from:

**BLICK TIME RECORDERS LTD.**  
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 Terminus 2722, 3 lines,  
 Also at Birmingham, Cardiff, Leeds, Manchester, Newcastle and Nottingham


## *The quickness of the hand....*

An operative's hands, deft as any conjuror's can baffle the motion study engineer.

There frequently comes a time when his eyes just cannot keep pace with this industrial sleight-of-hand.

When this happens, he will, if he is fortunate enough to work for an organisation that is 100% motion-study minded, enlist the aid of the Bolex cine camera. With its super-sensitive lens, its high speed shutter and many other refinements the Bolex enables him to record movement in infinitesimal detail.

The pictures he records are afterwards projected on a screen, many times enlarged, for close study and analysis.

Model H16 is the Bolex camera that does this very special work. It has numerous other uses too, for staff training, sales promotion, public relations, etc.

We'll tell you all about it if you will write or phone.

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# BOLEX



**CINEX LTD.** Sole U.K. distributors of Bolex cine cameras and projectors.  
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In their black and cream cabinets the new Edison Loudspeakerphone units fit smoothly into the setting of the modern office, forming an attractive addition to the busy executive's desk and providing the quickest and most efficient method of office inter-communication.

The Loudspeakerphone is completely secret in operation and its simple push-button call system gives instant and foolproof contact.

It is not a rental system, you make one payment only.

### PRICE:

Standard Master Unit for 6 extensions **£22-10-0**

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Extension Units (each) **£4-5-0**

NO PURCHASE TAX



SEND TO-DAY FOR FULL DETAILS

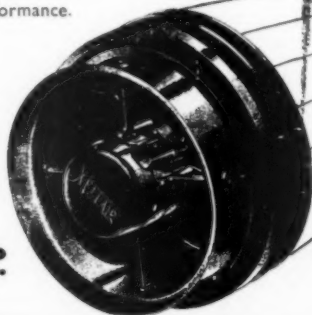
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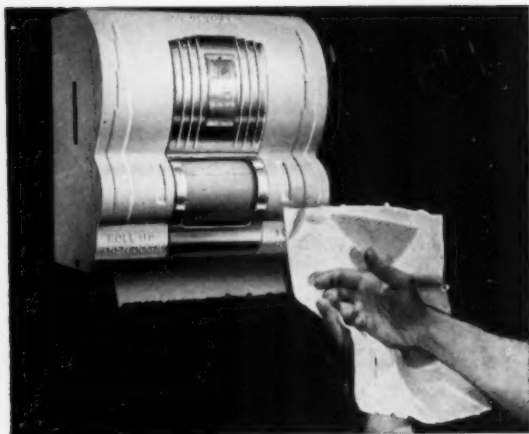
This Window Fan carries a **National Physical Laboratory Certificate** confirming its performance.



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**WINDOW FAN** X.8.

THE GENERAL ELECTRIC CO. LTD., MAGNET HOUSE, KINGSWAY, LONDON, W.C.2



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go hand in hand

**G**UARD against the spread of infection and ensure that your washrooms are hygienically safe by installing the HARCRAFT PAPER TOWEL SYSTEM.

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# Welfare is good for you

By GEOFFREY SHAWCROSS

The firm whose slogan is "Guinness is good for you" has long realized that to manufacture a first-rate product you must have first-rate staff. As a result, they have introduced an industrial welfare plan the equal of any in the United Kingdom.

THE whole welfare system at Arthur Guinness, Sons & Co. Ltd., Dublin, is logical and commences with the first approach made by the would-be employee. Everyone seeking employment at the brewery must pass a stiff medical examination, must satisfy the doctor that he or she is strong enough for the work, and must be vaccinated or re-vaccinated, if deemed advisable. Three doctors, one of whom is in residence for day and night duty, attend the dispensary each weekday for the purpose of giving advice and treatment to workers and their families; also to widows of employees, orphans and pensioners. If a patient is genuinely unable to visit the dispensary, one of the doctors will call at his home.

The dispensary or medical department, at Robert Street, Dublin, first built in 1901 and enlarged from time to time since, comprises consulting rooms, waiting rooms, couch examination rooms, a pharmacy, offices, a dental department, a massage and remedial exercise department, a physio-therapy clinic, a dressing room, and an x-ray room with a vertical fluorescent screen. The resident medical officer's home is on the second storey above the front portion.

The staff comprises the chief medical officer, an assistant part-time medical officer, resident medical officer, a consulting surgeon, two part-time dental surgeons, two whole-time chemists, a whole-time State-registered nurse for surgery, a whole-time masseuse and physio-

therapist, a whole-time dental attendant, a welfare superintendent who is a qualified nurse, five clerks, two porters for the men's waiting room, a woman attendant for the women's waiting room, a laboratory assistant for the pharmacy, and a housekeeper for the resident medical officer.

All medical treatment at the dispensary is free, including medicines, ointments, use of appliances, etc. Each patient has his or her own record card on which are entered details of illness and other useful facts. In the case of dental patients at the dental clinic opened in 1915, everything is free except for dentures, which are paid for under an easy payment plan. The drugs used are the very best obtainable and include penicillin, sulphonomides, streptomycin, and those other fairly new drugs chloromycetin and aureomycin. Children of employees and of deceased employees up to the age of sixteen years may also receive free treatment at the dispensary and clinic, provided they are not gainfully employed.

## Accident Cases

Serious accident cases are taken to Dr. Steevens' Hospital, not far from the brewery, the firm paying all transport costs by arrangement with the St. John Ambulance Brigade. The company defrays the cost of necessary treatment in city hospitals and convalescent homes, and maintains twelve beds in sanatoria in the country for patients suffering from phthisis.

In 1946, 58,000 patients attended



Part of the dispensary at the Robert Street premises.





**The dressing ward.**



**The physiotherapy ward.**

at the dispensary, 2,000 visits were paid to patients' homes and no fewer than 113,000 prescriptions were compounded. The approximate inclusive annual cost of the medical services enumerated, excluding salaries, wages and maintenance of the dispensary premises is £45,000. This includes the cost of milk for debilitated or tuberculous children, and of stout for nursing mothers.

About 150 people attend the dispensary daily, and there is also another dispensary at the "Lower Level" near the cooerage yard and racking shed for cooerage and traffic department who are not out sick.

The massage and physio-therapy clinic started in 1917 has more than justified its adoption. Time lost as a result of accidents has been much reduced, as has that due to such afflictions as fibrositis, lumbago, neuritis and sciatica. The clinic is equipped with radiant heat, ultra-violet rays, infra-red radiation, short-wave diathermy, massage and appliances for remedial exercises, and wax and mud treatments (radio-active baths). T.B. patients are kept at the sanatorium at the firm's expense for as long as is necessary, and if the disease has been arrested, they are re-employed by the firm at light, open-air occupations and examined, x-rayed and weighed at intervals to ensure that there has been no lapse of re-infection.

Sick employees receive the following illness allowances, and not wages, less National Health Insurance payments:

Married Men (when at home), 75 per cent. of wages.

Married Men (when in hospital), 66 per cent. of wages.

Unmarried Men (when at home), 50 per cent. of wages.

Unmarried Men (when in hospital), 25 per cent. of wages.

Full pay is provided when absence from work is due to infection in the employee's home or if he or she is sick following vaccination. Increased sick allowance up to full pay is granted in accident cases not due to the negligence of the employee, also in special cases where undue hardship results from protracted illness.

There is a savings bank at which interest on deposits at the rate of 5 per cent. is paid half yearly. There is also the Guinness Permanent Building Society, which is substantially assisted by the company and aids employees to purchase their homes.

### **Pensions**

Non-contributory pensions at the rate of one-sixtieth of wages for each year of service, up to a maximum of forty-sixtieths, are awarded by the Board to elderly employees and those who through prolonged physical or mental incapacity are unable to do their

work. The minimum period entitling an employee to a pension is ten years. The widow of an employee receives a pension based on her husband's grade or classification and in certain cases on the length of her husband's service. When an employee or pensioner dies, the firm makes a grant towards the funeral expenses.

### **Canteen Facilities, etc.**

There is an excellent canteen at which a substantial breakfast can be had for 9d., a three-course dinner for 10d. and high tea for 10d., these being, of course, subsidized by the firm. A visitor is much impressed with the quality and quantity of the meals served, the obvious satisfaction of the diners, and the quiet efficiency of those serving the food. The kitchen contains all the latest labour-saving devices.

The company pays the fees of employees between fourteen and thirty years of age who attend the City of Dublin Technical Schools in the evening. Protective clothing, uniforms for commissionaires, etc., are also provided by the firm.

Provision is made for recreation and there is a large playing-field at Crumlin, about a mile and a half away from the brewery, with pavilion, dressing rooms and full sports equipment. Debating and dramatic societies have also been organized.

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This modern method of Clothes care and storage dries and airs, thereby reducing common cold absenteeism !

*Essential for  
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**AUTOMATIC CABINET  
CONTROLS Waste!**



*Cuts Towel  
your Costs*

**and is cheapest in the long run!**

There may be cheaper paper towels than **KWICK-DRY**, but the *Automatic Control Cabinet* as illustrated, which only releases one section with each pull, eliminates so much waste, that in the end these **BETTER** Quality towels are cheapest.

For the welfare of your staff, you should insist on **KWICK-DRY PAPER TOWELS**. Hygienic; losses, laundry bills and danger from communal towels are eliminated. For use in office, factory or canteen.

There is nothing drab or uninviting about **KWICK-DRY TOWELS**, they are a nice cream shade and furthermore, they are stronger wet than dry and do not disintegrate. **KWICK-DRY** conform to the 1937 Factory Act.

Supplied in flat interfolded packets or rolls dispensed from de-luxe automatic control cabinet.

*Full details on application to Towel Dept.*

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S.8.30

# Canteen Hygiene Begins in the Kitchen

Hygienic conditions are essential if infection is to be avoided in catering establishments. There is a high regard for cleanliness in all departments of the Babcock and Wilcox canteen in Houndsditch, London.



Customers come in a rush for the cafeteria service on the first and second floors. Food must be served quickly and cleanly with the appropriate utensils—tongs, lifters, broad knives and the rest. All spotlessly clean, like the stainless steel top of the hot cupboards.



The kitchen has a tiled floor and tiled walls. Whenever possible, equipment is raised so that the floor can be swept all over. The pots and pans are made of non-rusting aluminium and will last for many years.



In this still room, cutlery, cups and light equipment are stored in trays and racks instead of cupboards. The idea is to avoid dark and dusty corners.

Another view of the still room shown above. Cups and saucers are cleaned in a double sink—one for washing and the other for rinsing.



One of the most important aspects of canteen cleanliness is the way in which crockery is cleaned. This machine scrubs plates with nylon brushes. The equipment takes only an hour to deal with between 2,000 and 3,000 plates of all sizes.



In order to ensure thorough sterilization, the temperature of the water is kept at 180 degrees Fahrenheit on both the cleaning and rinsing sides of the equipment.

## Short Cuts to OFFICE EFFICIENCY

### Invoicing Returnable Containers

**A**S a result of the reorganization of their packing department, described in the January issue of *BUSINESS*, Harrods, Ltd. found themselves using a considerably increased number of returnable containers, and the book-keeping necessary to deal with these threatened to overtax the office.

The management decided to eliminate completely the invoicing of containers at the time of despatch. Instead, a printed postcard was prepared and sent with each container,

duly stamped. The postcard contains three statements:

- (1) I have already returned the container.
- (2) I shall return the container shortly.
- (3) I wish to retain the container, and agree to pay a charge of .....

The customer is asked to cross out the two inapplicable statements and return the postcard immediately. The price charged for the container (a fictitiously high one)

is filled in by the office before the card is sent.

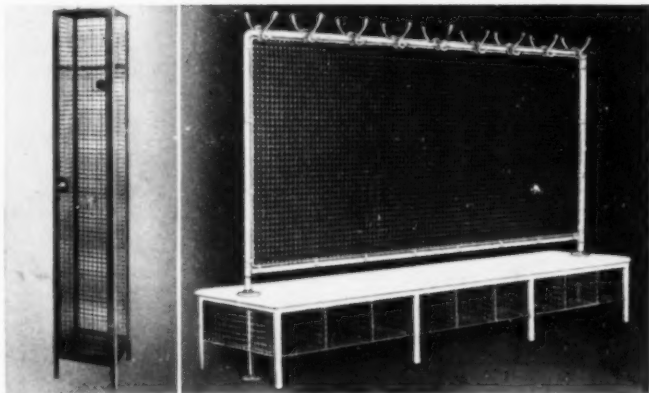
When the cards are returned, they are checked. In cases (1) and (2) no further action is called for from the office (though the packing department will, of course, check against receipts of returned containers). In the case of (3) the returned card represents an authority to invoice the customer with the quoted charge for the container. Thus instead of entering 1,000 items in a ledger and subsequently removing 990 of them, the paper work has been limited to the actual issue of the 10 invoices.

#### Telephone Tips

**I**NEFFICIENT use of the telephone means heavy Post Office charges and—even more important—lost orders and bad public relations. Hence many firms are paying great attention to training staff in the proper use of the telephone.

Tube Investments, Ltd., have recently issued *A Guide to the Use*

### CLOAKROOM FITTINGS AND WIREWORK LOCKERS



Harvey Cloakroom Fittings have been designed to meet the requirements of all modern cloakrooms. The double-sided island stack illustrated above is approx. 5' 6" high and is constructed of tubular framework enclosing a wirework panel. The wooden seat is supported by an angle frame and tee bar legs, incorporating boot and shoe compartments approximately 12" wide x 9" high x 12" from front to back. Send for List BU 830

Harvey Wirework Clothes Lockers are strong and durable, and economise space. Available in single units or nests of 2, 3, 4, or 5 Lockers.

**G. A. Harvey & Co. (London) Ltd. Harvey Woolwich Road, London S.E.7**





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**Who has the  
last word on  
carbon paper...**  
*and why..?*

How did the make of carbon paper used in your organisation come to be chosen... who orders it now? Investigations show that in many cases executives do not know the answer to these questions. Development and research by the Columbia organisation are such that you cannot be sure you are using the *best* until you have tested Columbia "Titan" the carbon paper that satisfies all the eleven proven essentials for perfect carbon copies. Make a comparative test NOW... your time will be amply repaid.



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**COLUMBIA RIBBON & CARBON MANUFACTURING CO. LTD.,**  
Head Office: Kangley Bridge Road, Lower Sydenham, London, S.E.26. Phone: Sydenham 5193-6.

JULY, 1951

89

of the Telephone in Business as a training booklet for all members of their staff. Brightly written and well produced, it covers in simple language the do's and don'ts of handling telephone calls.

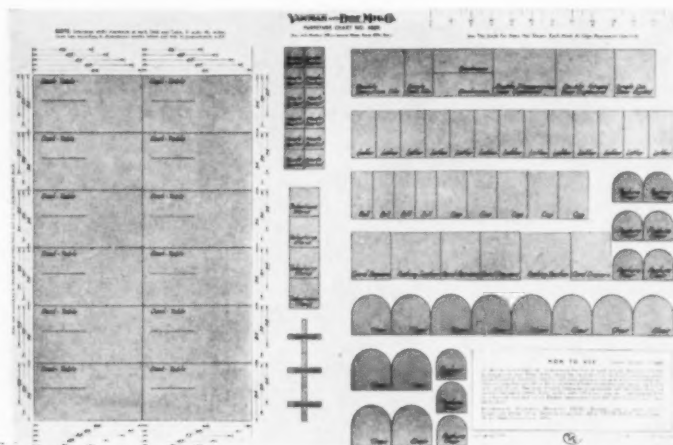
There is a pleasantly realistic insistence on costs. "A letter costs at least ten times as much as a local telephone call," the booklet insists, and suggests therefore that correspondence between local companies should take place only when it is essential that facts should be committed to paper. All outgoing letters should contain, as a reference, the telephone extension number of the man signing them.

On the other hand, the rule is laid down: "Don't make a trunk call if a letter will serve your purpose equally well." The minimum charge for a trunk call from Birmingham to London, it points out, just about represents the profit of the sale of half a hundredweight of mild steel tubing.

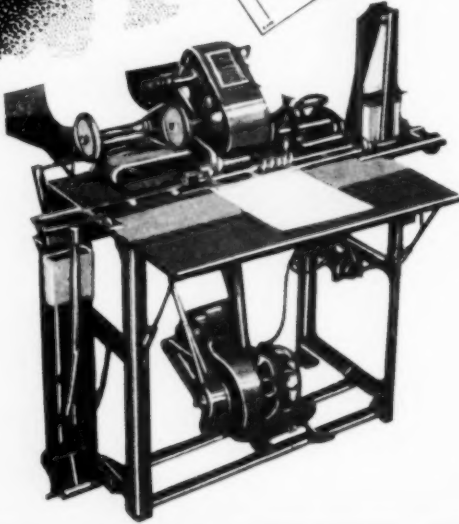
Another firm that has recently distributed a booklet on the use of the telephone to its telephonists is

the Central News Agency, Ltd., of Johannesburg, S. Africa. This firm backed up the message by issuing a series of sticky-back labels each

month with slogans such as "Remember—I am the Voice of the C.N.A." to be stuck on the base of the telephone.



An American manufacturer of office furniture (who can get more cardboard than his British counterpart), has produced this cut-out chart so that potential purchasers may make alternative arrangements on squared paper of their office layout, before deciding finally upon what furniture they can use.



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JULY, 1951

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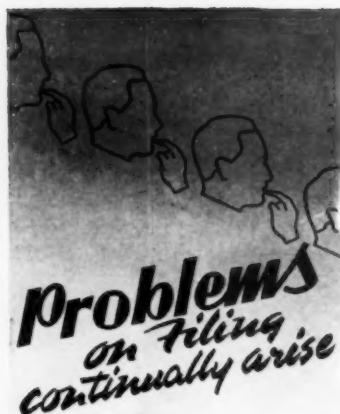
Stocked by your usual stationer or artists materials dealer. If you have difficulty in obtaining the Flo-master write to the manufacturers—Cushman & Denison Co. Ltd., Dept. G, 142/144 Camberwell New Road, London, S.E.5, enclosing extra 6d. for Reg. Post.

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### Office Equipment Industry News

## New Factory for Imperial Typewriter Co.

**T**HE Imperial Typewriter Co. Ltd. has decided to open a branch factory in Hull. Reason for this is the continued demand for Imperial machines and shortage of labour in Leicester.

The new factory will be about 100,000 square feet in size, and the cost of the buildings and the equipment will be approximately £500,000. Production at the Leicester factory will not be affected in any way.

The Hull plant will provide immediate employment for 500 workers and this figure will rise to 2,000 and may ultimately reach 3,000. Key workers will be moved from Leicester to Hull to supervise training. Plans for the layout and equipment of the new works are now in hand, and the course of two new roads has been slightly altered to make room for the factory.



**W**ELL-KNOWN figure in the office equipment industry, Mr. George Thomson, sales manager of Kaye's Rotaprint Agency, is retiring after over 20 years service with the company. He joined Kaye's in 1928 as a salesman and was appointed sales manager three years later.

Always a showman in the grand manner, Mr. Thomson's best known venture was the presentation of an African lion appropriately named "Rota" to Mr. Churchill in 1943. Now 65 years old, Mr. Thomson is retiring to Sussex and he will be replaced at Kaye's by 44 year old William Royce. Mr. Royce started his career as a lithographer, became a printing ink salesman and eventually joined the service staff of Kaye's in 1935.

**M**R. George A. Marshall, chairman of The National Cash Register Company Ltd., has left England to become president of the Canadian company. It is 22 years since he made his first personal contact with the British organization, whose managing director he was from 1929-33, when he was appointed vice-president, overseas operations.



**T**HE recent speech of Sir Alexander Aikman, chairman of Powers-Samas Accounting Machines Ltd., was striking comment on the social influence of modern office equipment.

"The coming into this world of every British citizen is recorded by means of punched cards," Sir Alexander remarked. "Our continued existence from day to day, our state of health, our hospital treatment, our sickness benefits, our marriages, even our crimes are inexorably recorded by means of the product we manufacture and sell," he added.

Orders for the current year are coming in at a higher rate than the same period of 1950.



Mr. George Thomson, the retiring sales manager of Kaye's Rotaprint Agency Ltd., with Mr. William Royce (the new sales manager) and other members of the Rotaprint sales staff.

## SUGGESTION SCHEMES

*Continued from page 45*

past records, a target for the number of suggestions to be elicited from each department is fixed by agreement and during the year the percentage of the target reached is charted month by month for each department. These charts are shown to the foremen at regular meetings and the foreman of any department whose suggestions are lagging receives a certain amount of good natured chaff from the others. This competitive stimulus usually results in an improvement in the number of suggestions coming from his department. The Michelin Tyre Co., Ltd., goes a stage further and pays a bonus to foremen and charge hands, calculated on the basis of the suggestions coming from their departments. In this way supervisors have a vested interest in encouraging good suggestions by their staffs. There is also an incentive to expedite the study and adoption of suggestions within the shop, since, as a general rule, no reward is payable until the idea is in successful operation.

The practical job of collecting accepting or rejecting, and rewarding suggestions can obviously be carried out in many ways. The methods reported range all the way from the purely paternalistic, where all decisions rest solely with the managing director, to the ultra democratic, in which all decisions are taken by a committee of workers with the works manager in the chair acting purely as an umpire.

It is obvious, however, that in the successful schemes the actual organization of the scheme has been shaped by the overwhelming necessity for selling the scheme to the workers. It is clear that the successful schemes are those in which the firm leans over backward in its attempt to demonstrate that the scheme is based on impartiality, fair dealing and a real interest on the part of management.

*Continued on next page*



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"In our view, confidence in the impartiality of the adjudication must be the keynote of any suggestion scheme and for this reason no one except the secretary of the suggestion scheme committee knows who makes the suggestion," write John Rabone & Sons, Ltd. "The person making a suggestion is a number from start to finish and neither the joint managing directors nor the committee have any idea who is the person originating a suggestion."

Several firms provide special suggestion forms, one section of which is detachable. Both sections bear the same serial number and the worker writes out his suggestion on one, putting it without any name into a suggestions box, while retaining the other himself. Not until the suggestion has been assessed and a reward announced are the two sections of the form married and the identity of the suggestor revealed.

This insistence on secrecy may appear exaggerated, but does apparently meet a need. It is important in managing suggestion schemes, as elsewhere, to ensure not merely that justice is done, but that justice shall appear to be done—even to the most cynical of firebrands. Hence, the insistence on the participation by workers in running the scheme through some form of joint committee. It is significant that 29 firms out of the 46 had some form of committee operating their scheme.

The question of how much any particular award should be is obviously a tricky one. A dozen firms in the survey try wherever possible to link the size of an award with the amount of monetary saving achieved by it. The amount awarded varies with the firm from five to 50 per cent. of the first year's saving. In cases where such measurement is not practicable, the amount of the award is left to the decision of a committee.

Other firms, however, argue that the reward for a suggestion should be linked to the amount of thought and work that a man has put into

it rather than to the benefit that management receives. Hence various yardsticks are set out and some form of assessment is made according to these. A number of firms who take this view award small sums (10s. or £1) as encouragement in cases where suggestions are made which have obviously involved a considerable amount of work but cannot be accepted.

In addition to the normal awards for individual suggestions, nine firms give an extra award for the best suggestion received during a period (usually a year) while two firms give prizes for the greatest number of suggestions received from an individual or a department.

In this last category, the scheme of the Igranic Electric Co., Ltd., is the most interesting. In this scheme, each suggestion accepted is granted both an award in cash and an award in points. Good suggestions not accepted may also be awarded points but not cash. An additional prize is given to the worker with the most points at the end of six months.

The other important point stressed by all successful firms was the necessity for the prompt handling of all suggestions received—prompt acknowledgement of receipt, prompt adjudication and, above all, prompt adoption in to practice.

This need for prompt payment had led to the practice in many cases of making an initial payment of from £1 to £5 immediately the suggestion has been accepted and one or more further payments related to the actual saving achieved some six or twelve months later, when comparative figures can be used.

The yardstick of success has so far been taken as the number of suggestions received and the monetary savings that may be expected from them. But it is highly significant that only eight of the firms answering considered that monetary saving was the greatest advantage obtained, while 24 stressed

*Continued on next page*



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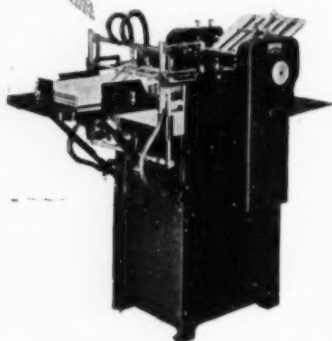
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that improvement of management-labour relations was more important. Here, of course, there can be no objective measurement, but the consensus of opinion is highly suggestive.

One important factor is the opportunity that a suggestion scheme gives for airing grievances which may find no other outlet. Some firms deprecate this aspect as a waste of time, but others welcome it.

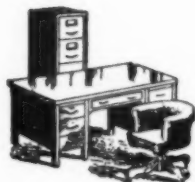
"Encouragement is given to use suggestion forms for the airing of complaints or the statement of vexatious problems even when no solution is offered," write the Michelin Tyre Company. "This blowing off steam is valued as an item in good labour relations even more than the practical value of any suggested improvements — which is not in itself inconsiderable."

The same view is taken by Ronson Products, Ltd. "Suggestion schemes are largely used as a means of giving employees an outlet for criticisms as well as ideas that they would otherwise keep to themselves. As the author of a suggestion remains anonymous we obtain more straight-from-the-shoulder information than would otherwise be the case."

There is, however, more even to the argument than this. Rowntree & Co., Ltd., who have been operating a suggestion scheme for over 40 years, put the case in a nutshell: "Employees, through the medium of this company's suggestion scheme, are made to feel that they can, if they so wish, contribute towards the more efficient running of the organization. This feeling, however intangible, does, we think, have a positive effect on production. We would also say that the existence of a suggestion scheme assists in making employees more conscious of the importance of quality of products, methods of production, layout, keeping waste down to an absolute minimum, etc. To the extent that a suggestion scheme does this, so is the morale of an organization improved."

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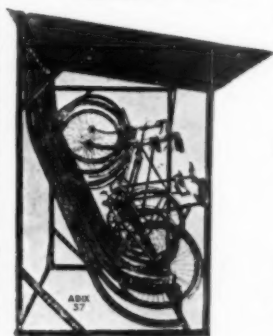
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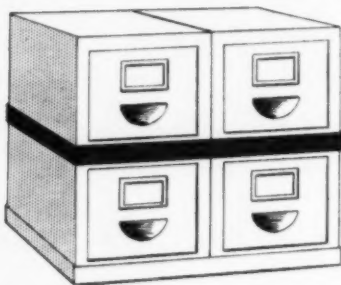
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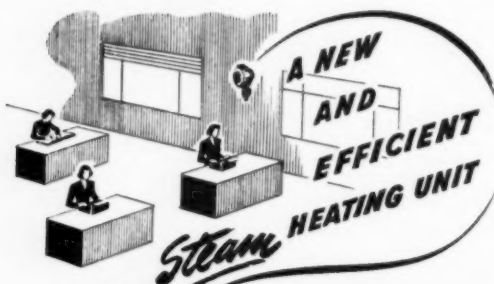
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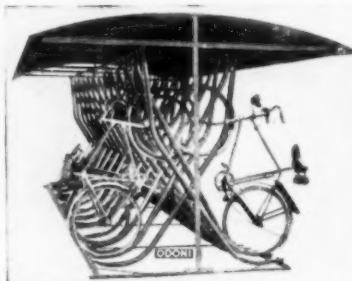
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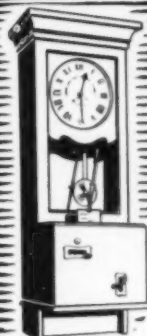
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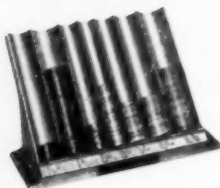
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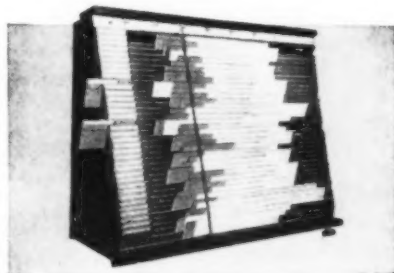
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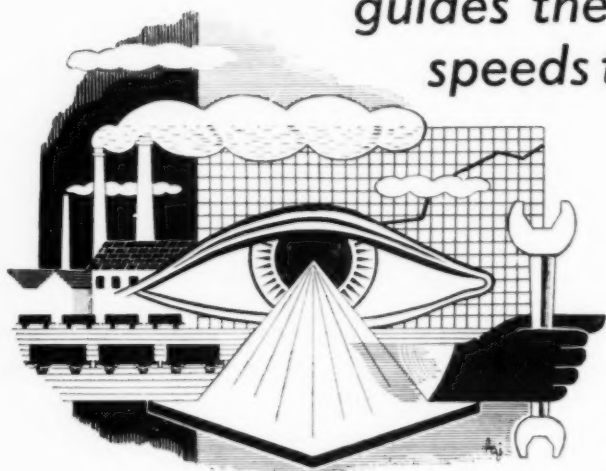
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